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AFWAL-TR-82-4185

CHARACTERIZATION OF HIGH TEMPERATURE POLYMERIC DAMPING MATERIALS

Richard P. Chartoff, Ival O. Salyer, Michael L. Drake, et al.

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FINAL TECHNICAL REPORT - July 21 1980 - 21 July 1982

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This technical report has been reviewed and is approved for publication.

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High Temperature Polymers	Thermal Stability
Aromatic Polymers	Thermogravimetric Analysis

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

An exploratory development program was carried out to find polymer systems that are effective energy absorbers for vibration damping purposes in the temperature range from 300°F (149°C) to 700°F (371°C). The study concentrated on aromatic backbone structures of the type that were known to have good thermal stabilities and glass transitions falling in the temperature range of interest. Among the types of polymers considered were various polyimide, polysulfone, ATX, and silicone materials.

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20. Abstract (Concluded)

Using dynamic mechanical property measurements it was found that many of the polymers were effective dampers in the target temperature range. While the damping temperature range of each individual material was narrow, the range could be modified and broadened by the selective use of fillers, plasticizers, and polyblending. A number of polymers and polymer formulations were identified that have the potential for effective vibration damping within the temperature range 300°F (149°C) to 700°F (371°C). Further work on the application of these materials in structural damping treatments was recommended.

PREFACE

This report was prepared by Dr. Richard P. Chartoff with the assistance of Ival O. Salyer, Michael L. Drake, John Mann Butler, Daniel E. Miller, Jerald L. Burkett, Charles W. Griffen, and William A. Price. The work discussed was performed under Contract No. F33615-80-C-5083 by The Center for Basic and Applied Polymer Research, University of Dayton Research Institute, 300 College Park Avenue, Dayton, Ohio 45469. The contract was administered under the direction of the Air Force Wright Aeronautical Laboratories/Materials Laboratory, Metals Behavior Branch (AFWAL/MLLN), Wright-Patterson Air Force Base, Ohio under Job Order No. 2418 03 16 with Capt. Thomas Lagnese as Project Engineer.

The studies reported were conducted during the time period July 1980 through July 1982 at the University of Dayton Research Institute.

The authors wish to acknowledge the efforts of Ms. Elizabeth Ammentorp, Mr. Clifford Brust, Ms. Maureen Gran, Mr. Paul Jeanmougin, Mr. Thomas Kueterman, and Mr. Mark Ruddell with data acquisition and reduction. Also, Mrs. Jeanne Drake provided valuable assistance in compiling and typing.

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SECTION I
INTRODUCTION

1. RATIONALE FOR THE PROGRAM

Based on considerable past experience the Air Force has determined that the use of polymeric materials to control resonant vibration induced high cycle fatigue (HCF) of jet engine components is a viable and cost-effective approach. Current Air Force damping technology requires polymeric systems which have good thermal and environmental stabilities at high temperatures, up to 700°F (371°C), and also possess adequate damping properties within the 300°F (149°C) to 700°F (371°C) temperature range. However, there are few polymeric systems available for which the desired combination of properties has been verified.

An exploratory development program was carried out to find polymer systems which are potential candidates to be effective energy absorbers in the temperature range from 300°F (149°C) to 700°F (371°C). These materials also are required to have good thermal and oxidative stabilities and preferably should be processable for easy application as energy absorbing surface coatings and adhesives. The objective of such a program is to determine basic structure-property relations in certain classes of thermally stable polymers so as to establish their potential for energy absorption applications in this broad temperature range. In addition the increase in energy absorption efficiency obtained by incorporating a platelet graphite filler into the preferred polymer systems was considered. It was concluded that for practical reasons, considering the program scope and available budget, our plan would be to concentrate on polymers with aromatic backbone structures that have peak damping in the 300°F to 700°F (149°C to 371°C) temperature range. Aromatic chain polymers generally have good thermal stabilities. From the classes selected, sufficient quantities of each material were to be obtained either from commercial sources or from other laboratories.

The classes of polymers that were studied included acetylene containing aromatic polymers, aromatic polyimides, aromatic polysulfones, and selected silicone polymers. Several candidate polymers representative of these classes were available from various sources but their energy absorption capabilities were not fully known prior to this program.

These classes were identified after a thorough literature review as well as discussions with scientists at various laboratories and industrial polymer suppliers. The criteria used by UDRI for selection of the recommended polymer classes and/or types to be studied in this program were the following:

a. A TGA thermal stability in air to at least 500°F (250°C) without weight loss or to at least 700°F (371°C) in N_2.

b. In the absence of TGA data, the polymer should contain linking structural groups known to be thermally stable.

c. The polymer should have a T_g in the 300°F (149°C) to 700°F (371°C) temperature range.

d. The material should be processable readily into a form which can be used for property evaluation.

e. Each polymer should be available in quantities sufficient for the required characterization measurements.

At least five specific types in each of the four polymer classes noted were selected for evaluation and are listed in tabular form in the following paragraphs. In addition to evaluating the specific representative members of the various polymer classes, we also will evaluate increases in damping performance obtained by incorporating a platelet filler such as graphite into preferred members of these classes. Decisions on which types of polymers in each class were to be studied further were reviewed with the Air Force Project Engineer as the program progressed.

2. POLYMERS SELECTED FOR CHARACTERIZATION

a. Aromatic Polymers From Acetylene Precursors

These materials, known as ATX resins, cure into crosslinked network polymers through reaction of terminal acetylene groups. Representative ATX monomers and their sources are listed in Table 1.

b. Aromatic Polyimides

Both thermoplastic and thermosetting polyimides are available from a variety of commercial and nonindustrial sources. These materials generally have very good thermal and thermo-oxidative stabilities as well as glass transition temperatures in the required temperature range. Various polyimides having different structural features are listed in Table 2. Polyimides are possibly the most widely used of commercial high temperature polymers. For this reason their properties are documented in the literature to a greater extent than other high temperature polymers. This will prove useful for the current program.

c. Aromatic Polysulfones and Related Polymers

Polysulfones are thermoplastic materials that have good thermal stabilities and a broad range of T_g values. They have good thermal and thermooxidative stabilities and are less moisture sensitive than polyimides. For these reasons they have excellent potential as thermostable damping materials. Closely related to these are polysulfides and polysulfonates. Materials in this group that are of particular interest are listed in Table 3.

d. Silicon Containing Polymers

Most common silicone polymers have elastomeric properties in the temperature range of interest. The same polymers also have marginal long-term thermal stabilities. As the aromatic character of silicone structures is increased their thermal stabilities and T_g values increase. This suggests that the more aromatic silicon containing polymers might be

TABLE 1

REPRESENTATIVE ATX RESINS FOR DAMPING STUDIES

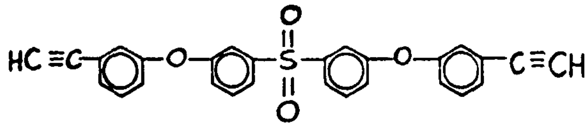
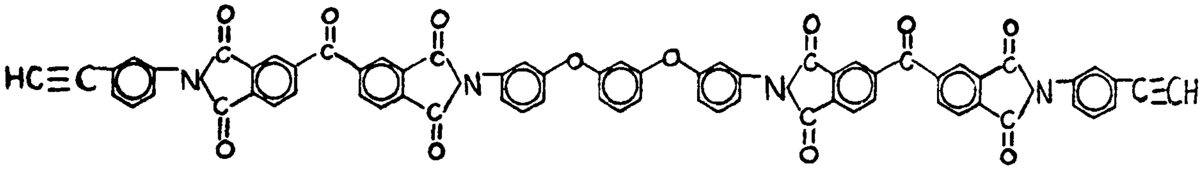
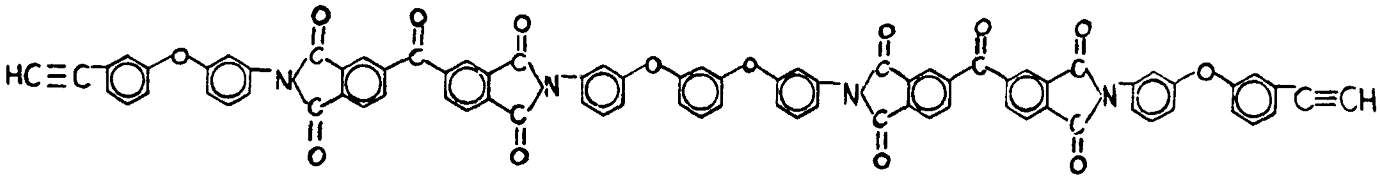
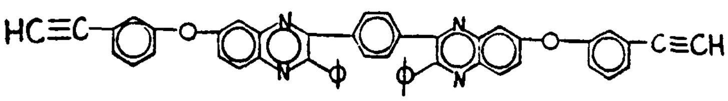
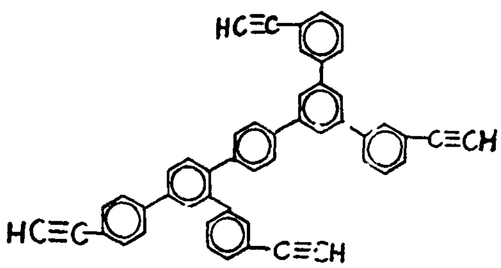
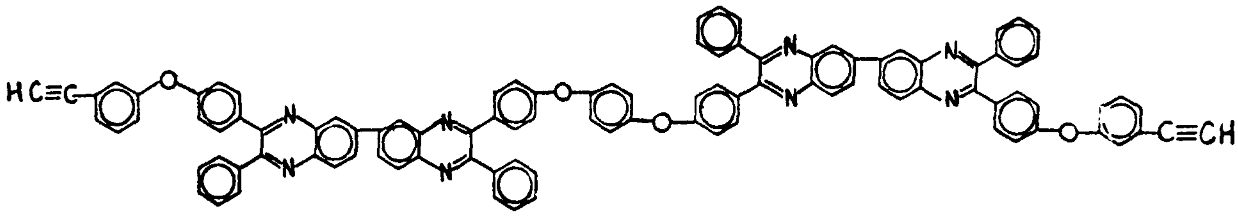
Name	Structure	Source
ATS		Gulf R&D Corp.
HR 600		Gulf Oil Chemical Corp.
HR 650		Gulf Oil Chemical Corp.
ATQ		AFWAL/MLBC
H-Resin		Hercules Co.

TABLE 1 (Concluded)

REPRESENTATIVE ATX RESINS FOR DAMPING STUDIES

Name	Structure	Source
BATQ-H		AFWAL/MLBP



Name	Structure	Source
ATF		UDRI

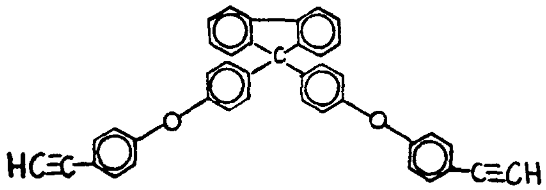


TABLE 2

POLYIMIDES FOR DAMPING CHARACTERIZATION

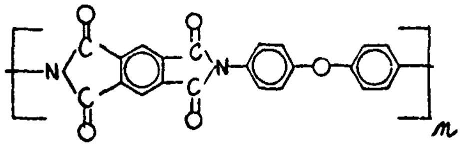
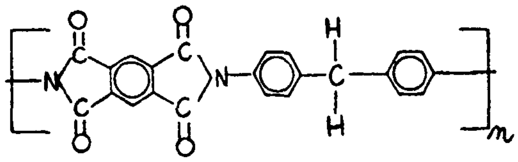
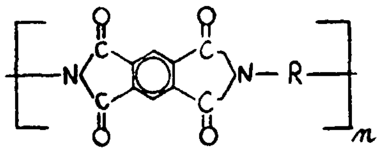
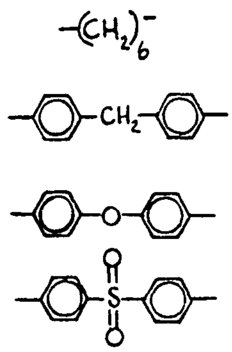
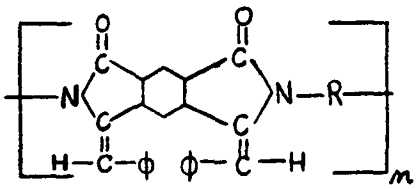
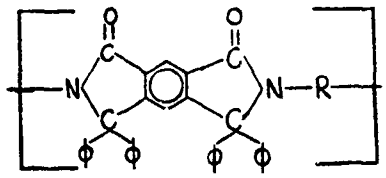
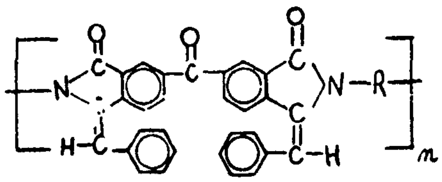
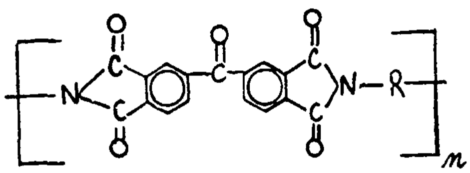
Name	Structure		Source
A. Thermoplastics			
Kapton			DuPont
2080			Upjohn
Experimental Polymer 1		R Groups 	Yamagata University (Japan)
Experimental Polymer 2			Yamagata University (Japan)
Experimental Polymer 3			Yamagata University (Japan)
Experimental Polymer 4			Yamagata University (Japan)
Experimental Polymer 5			Yamagata University (Japan)

TABLE 2 (Concluded)

POLYIMIDES FOR DAMPING CHARACTERIZATION

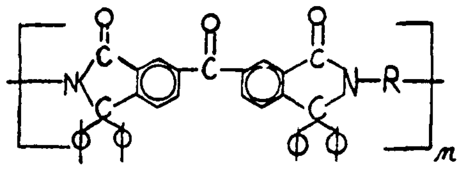
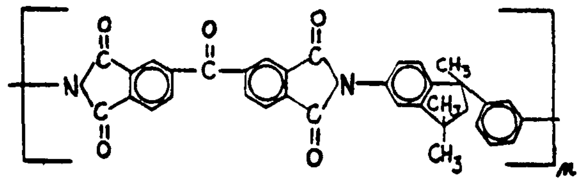
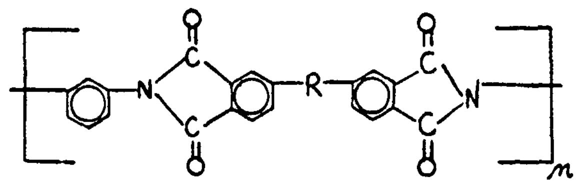
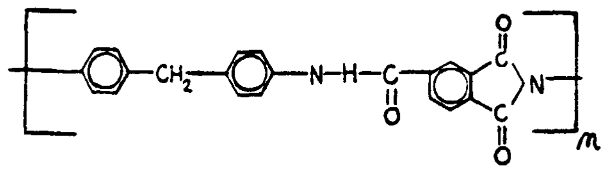
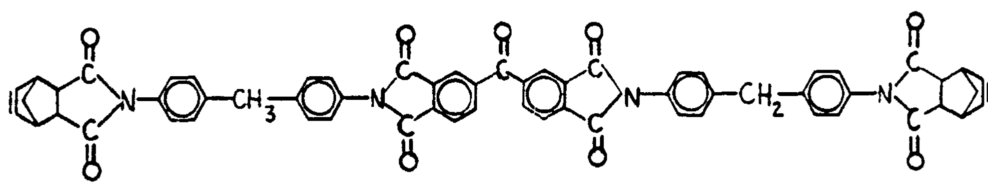
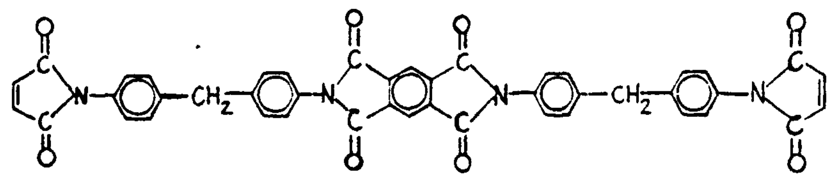
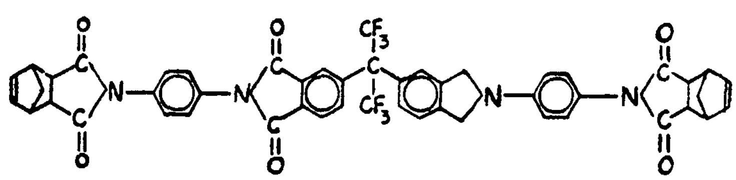
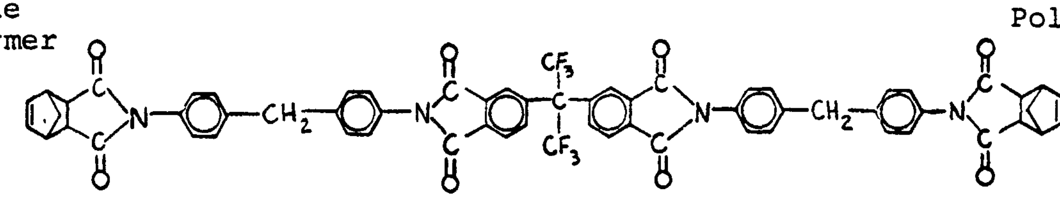
Name	Structure	Source
A. Thermoplastics		
Experimental Polymer 6		University of Texas-South West
XU 218		Ciba-Geigy
Vespel S-2		DuPont
Torlon 4000		Amoco
B. Thermosets		
P13N		Ciba-Geigy
F 178		Hexcel
PMR-15		Ciba-Geigy
Nadimide-Fluorine prepolymer		U.S. Polymeric

TABLE 3

POLYSULFONE AND RELATED POLYMERS FOR DAMPING APPLICATIONS

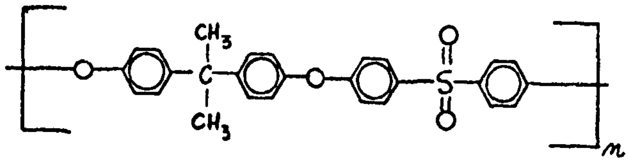
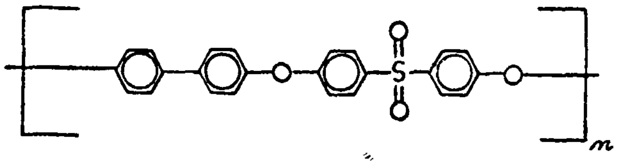
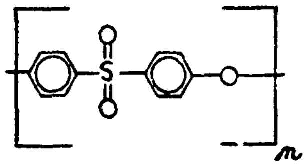
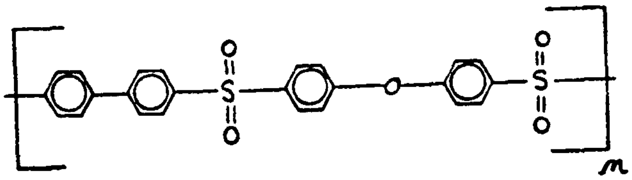
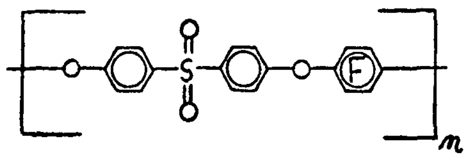
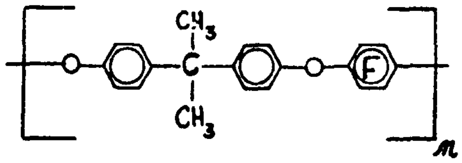
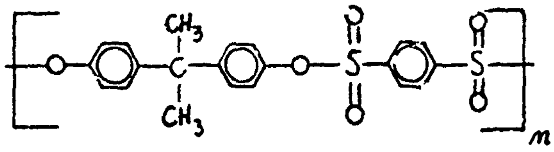
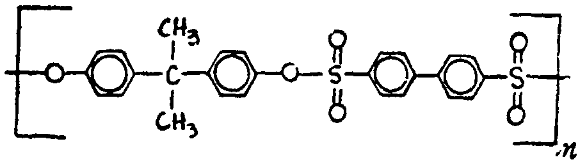
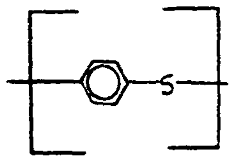
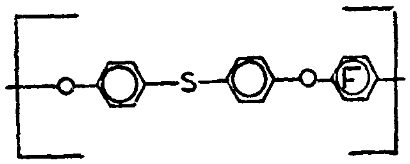
Name	Structure	Source
A. Polysulfones		
Udel P-1700		Union Carbide
Radel		Union Carbide
Victrex		ICI Americas
Astrel 360		Carborundum
Fluorosulfone		Univ. of Texas
Bisphenol A Fluoro-Aromatic		Univ. of Texas

TABLE 3 (Concluded)

POLYSULFONE AND RELATED POLYMERS FOR DAMPING APPLICATIONS

Name	Structure	Source
B. Polysulfonates		
1.		Borg Warner
2.		Govart-Bayer
C. Polysulfides		
Ryton		Phillips Petroleum
Fluorosulfide		Univ. of Texas

promising high temperature damping polymers. Some of the more interesting possibilities are listed in Table 4.

3. MAJOR CHARACTERIZATION METHODS

a. Dynamic Mechanical Properties Testing

Two methods were used in this program for measuring the dynamic mechanical properties of polymers that were studied for their high-temperature damping capabilities. These were vibrating beam tests and the DuPont 981 dynamic mechanical analyzer (DMA).

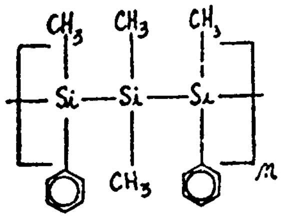
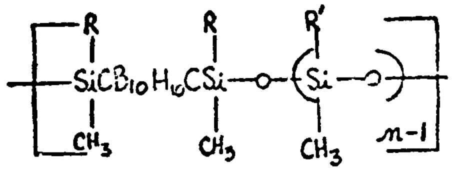
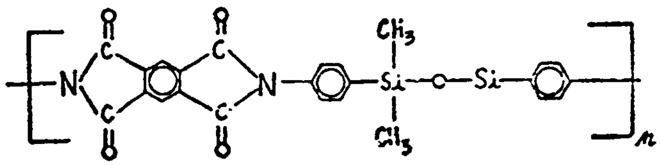
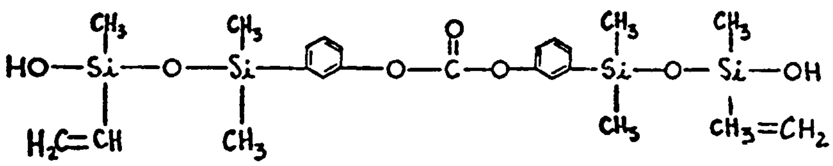
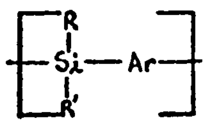
Selected materials that were identified as preferred polymers by initial screening studies using DMA and TGA results were evaluated by vibrating beam tests in accordance with the ASTM E-33 Committee's standard test procedures for determining damping material properties. However, the DMA was used for obtaining most of the dynamic property results because data are obtained faster by this method with smaller amounts of material. Also, DMA samples need not be bonded to a beam, an instrumental feature which lends itself well to material screening studies. This point will be discussed in more detail in a later paragraph on vibrating beam test results.

b. Thermal Stability Tests

The relative thermal stability for each of the various polymers considered was evaluated using the thermogravimetric analysis (TGA) method at a heating rate of 10°C/min. This yields a weight loss versus temperature profile for each material. In this program such data were taken for each baseline material both in air and nitrogen atmospheres. In addition oven aging studies for DMA size specimens of selected polymers were completed at 250°C and 300°C in air. Weight loss data for 100 hr. and 500 hr. at 250°C and 100 hr. at 300°C were recorded. DMA data for specimens aged in this way also were recorded and compared to those of the original polymers.

TABLE 4

SILICON CONTAINING POLYMERS FOR
VIBRATION DAMPING APPLICATIONS

Name	Structure	Source
Polysilastyrene		Univ. of Wisconsin
Polycarborane siloxane		Union Carbide
Silicone modified polyimide		Westinghouse
Polysac		AFWAL/MLBP
Polysilarylene		AFWAL/MLBT and others

SECTION II
POLYMER CHARACTERIZATION

1. SUMMARY OF MATERIALS CHARACTERIZED -- BASELINE POLYMERS

Baseline DMA and TGA data were obtained for most of the polymers listed in Tables 1-4. A summary of those for which data are presented in this report is presented in Table 5. Samples that were not available for use in this program are so listed. In general these were research materials where the available supply had been exhausted. From these baseline materials preferred materials were selected for additional study as described in subsequent paragraphs.

2. DMA DATA

Dynamic mechanical data for the polymers indicated in Table 5, as denoted in the column under DMA, are presented in Figures 1 through 46. These data are in the form of DMA curves including storage modulus (Young's modulus), loss modulus, and loss tangent for each material. From these data we find a number of materials that have T_g values in the temperature range of interest and also exhibit good damping properties. A summary of damping peak parameters for these polymers is presented in tabular form in Table 6.

In Table 6 we list the initial temperature T_1, the final temperature T_3, and the peak temperature for both loss modulus and loss tangent curves. The peak loss tangent values are cited as T_g values by convention because this is a usual practice in polymer analysis.

The two classes of materials, polyimides and polysulfones, are those for which we have obtained the largest amount of data and also the best damping results. The T_g values determined for these materials in relation to their structures are represented in Tables 7 and 8. The significant variation in the T_g values illustrates that there are indeed a good number of materials that may be suitable for damping applications in the targeted temperature

TABLE 5

STATUS OF DATA ON POLYMERS FOR HIGH TEMPERATURE DAMPING CHARACTERIZATION

1. ATX RESINS

	Have Sample	TGA	DMA
ATS	X	X	X
HR600	X	X	X
HR650	not available		
ATQ	not available		
H-Resin	X	X	X
BATQ-H	X	X	X
ATF	X	X	X

2. POLYIMIDES

	Have Sample	TGA	DMA
Kapton	X	X	X
2080	X	X	X
Experimental Polyimide #1	not available		
(cis & trans) #2	XX	XX	XX
#3	These materials not available		
#4	These materials not available		
#5	These materials not available		
#6	These materials not available		
XU 218	X	X	X
Vespel S-1	X	X	X
Torlon 4000	X	X	X
4203	X	X	X
4275	X	X	X
P13N	not available		
F178			X(glass cloth)
PMR15	not available		
Nadimide Fluorine			
LARC 160 (Rigimid 7)	X	X	material too brittle

TABLE 5 (Concluded)

STATUS OF DATA ON POLYMERS FOR HIGH TEMPERATURE DAMPING CHARACTERIZATION

3. POLYSULFONES

	Have Sample	TGA	DMA
Udel P1700	X	X	X
P1800	X	X	X
Radel	X	X	X
Victrex 200P	X	X	X
300P	X	X	X
600P	X	X	X
Astrel 360	X	X	X
Fluorosulfone	X	X	X
Bisphenol A Fluoro-Ø			
n = 0.38	X	X	X
= 0.58	X	X	X
Polysulfonates	not available		
Ryton	X	X	X
Fluorosulfide	X	X	X
Carbonyl Polysulfone (not in original plan)	X	X	X
Methylene Polysulfone (not in original plan)	X	X	X(315)

4. SILICONES

	Have Sample	TGA	DMA
Polysilastyrene 1	X	X	X
2	X	X	X
Polycarboranesiloxane	X	X	X
Silicone Modified Polyimide	not available		
Polysac	not available		
Polysilarylene	not available		

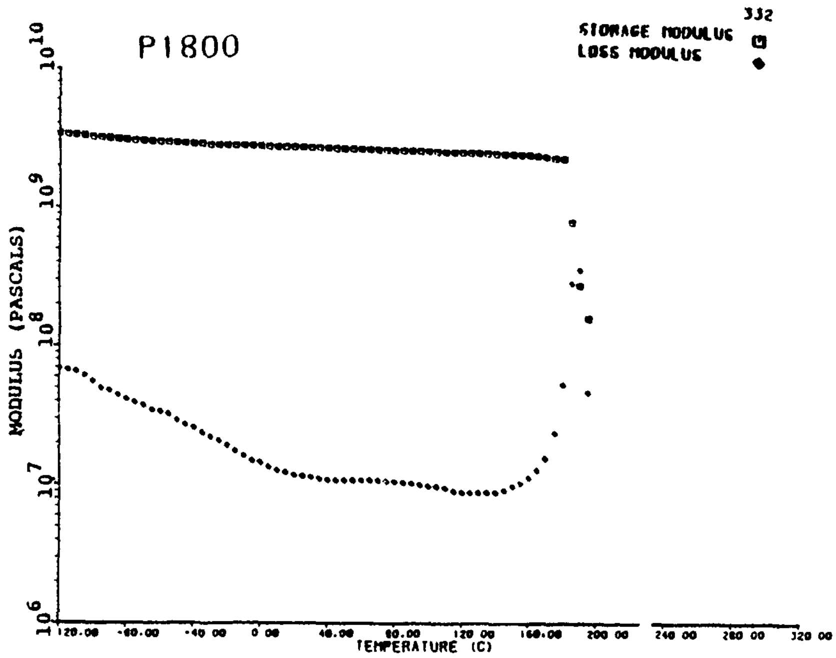


Figure 1. Bisphenol-A Polysulfone (Udel P-1800) DMA Storage and Loss Modulus Curves.

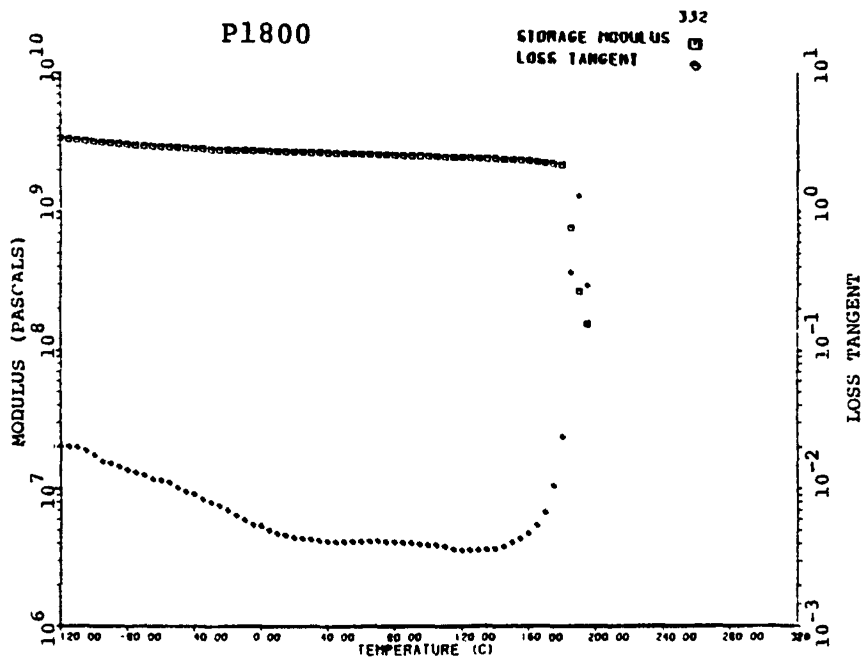


Figure 2. Bisphenol-A Polysulfone DMA Storage Modulus and Loss Tangent Curves.

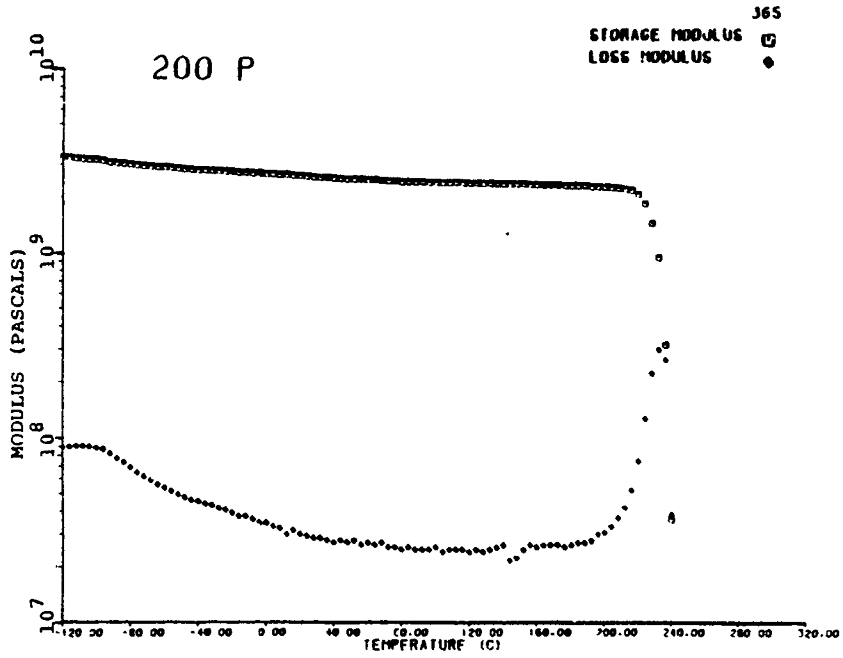


Figure 3. Polyethersulfone (Victrex 200P) DMA Storage and Loss Modulus Curves.

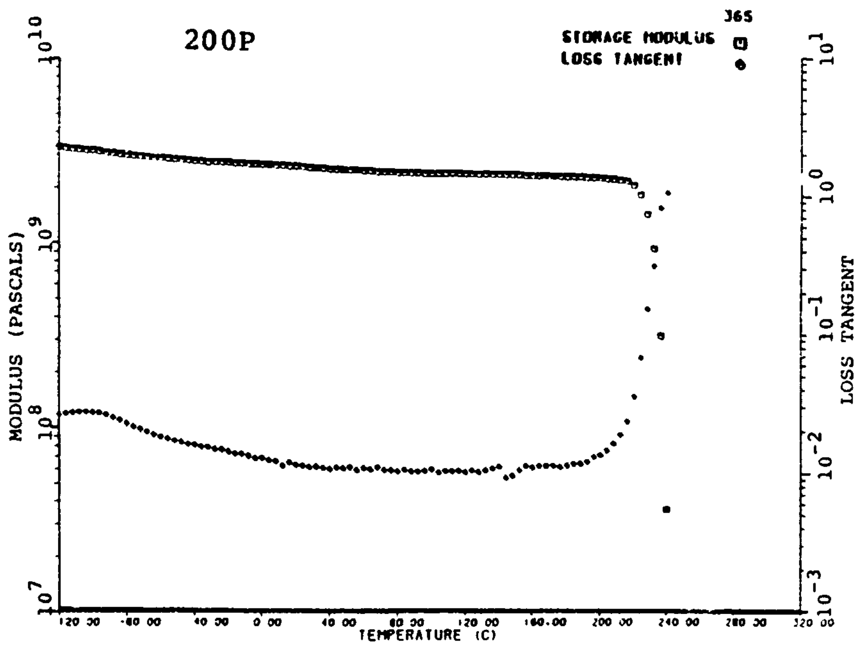


Figure 4. Polyethersulfone DMA Storage Modulus and Loss Tangent Curves.

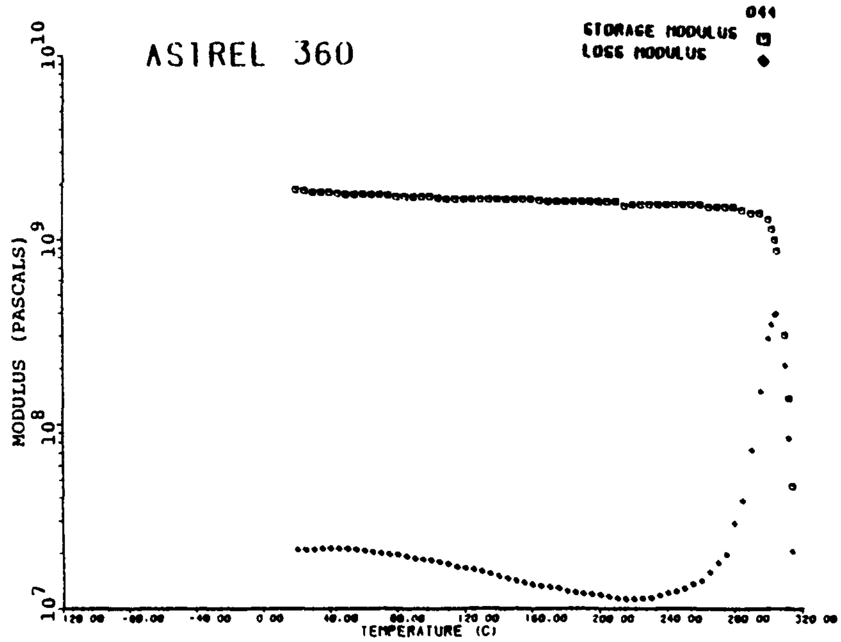


Figure 5. Polyarylsulfone (Astrel 360) DMA Storage and Loss Modulus Curves.

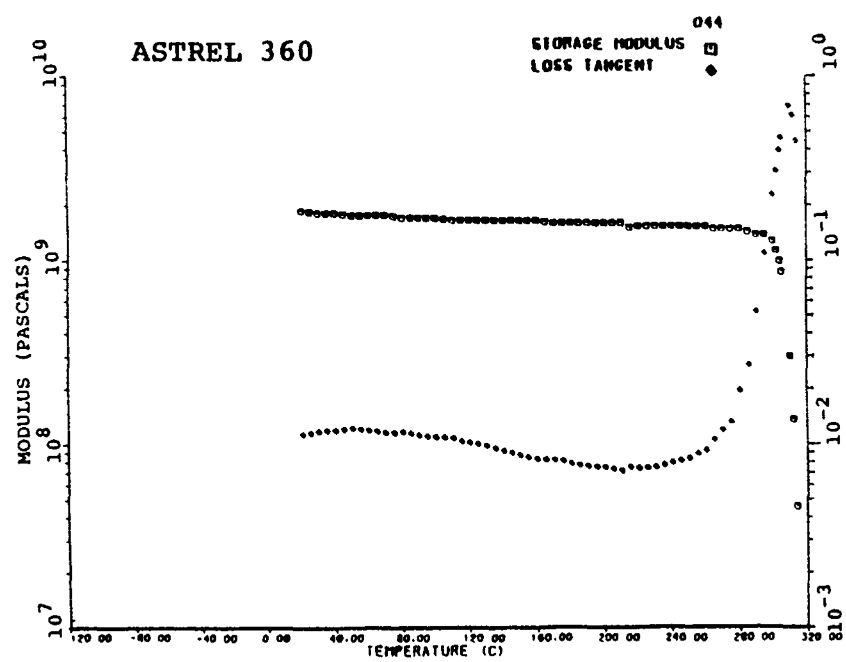


Figure 6. Polyarylsulfone DMA Storage Modulus and Loss Tangent Curves.

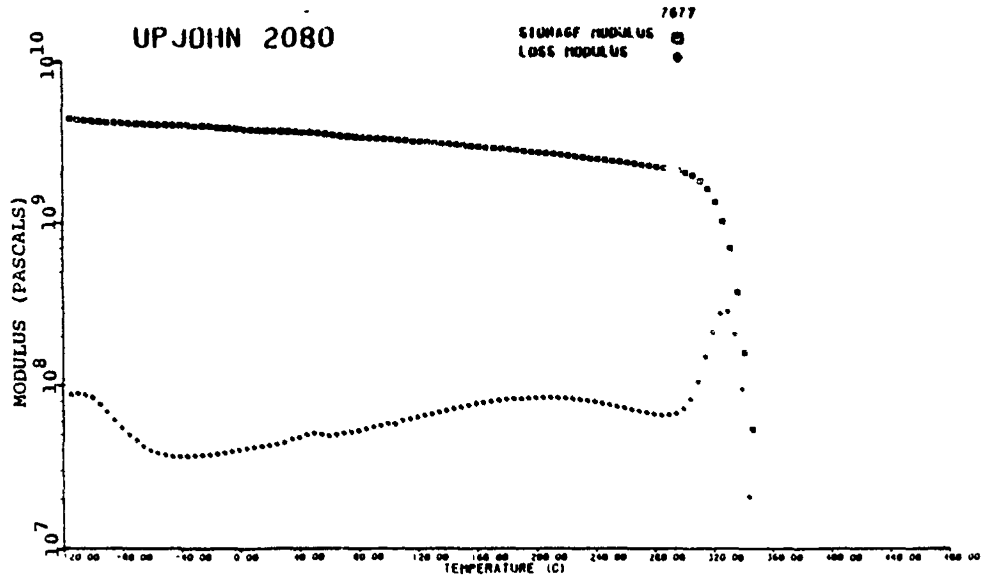


Figure 7. Methylenedianiline Polyimide (Upjohn 2080 Thermoplastic) DMA Storage Modulus and Loss Modulus Curves.

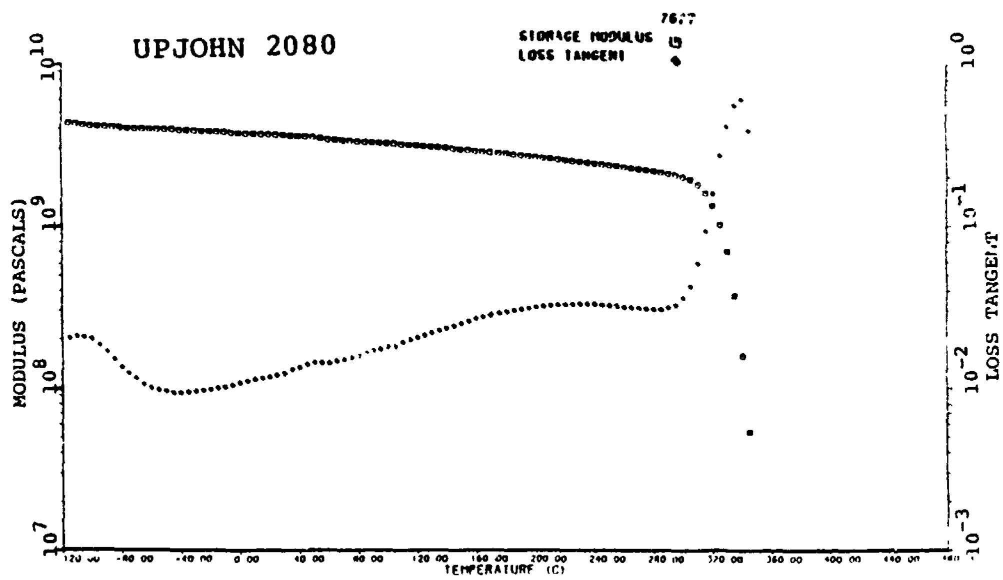


Figure 8. Methylenedianiline Polyimide DMA Storage Modulus and Loss Tangent Curves.

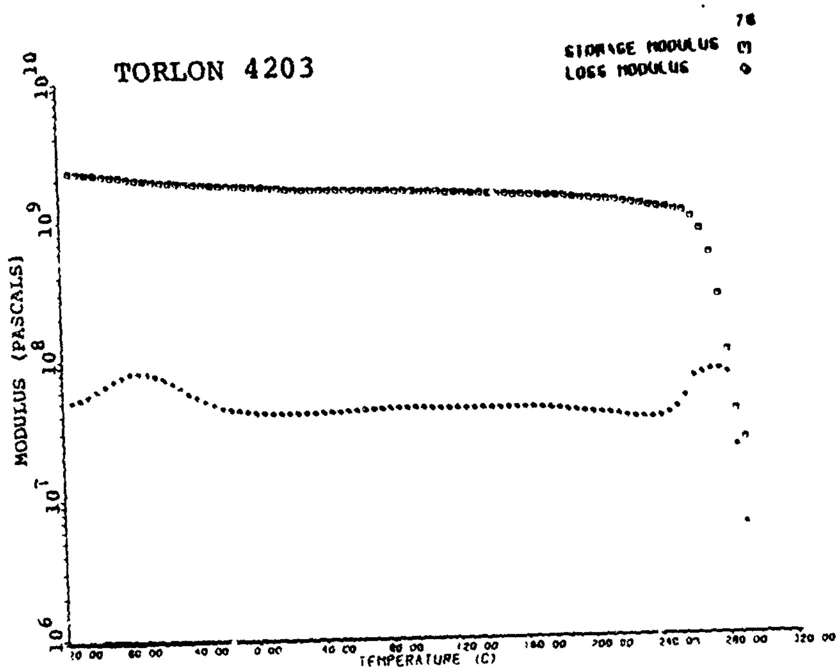


Figure 9. Methylenedianiline Polyamide-imide (Torlon 4203 Thermoplastic) DMA Storage and Loss Modulus Curves.

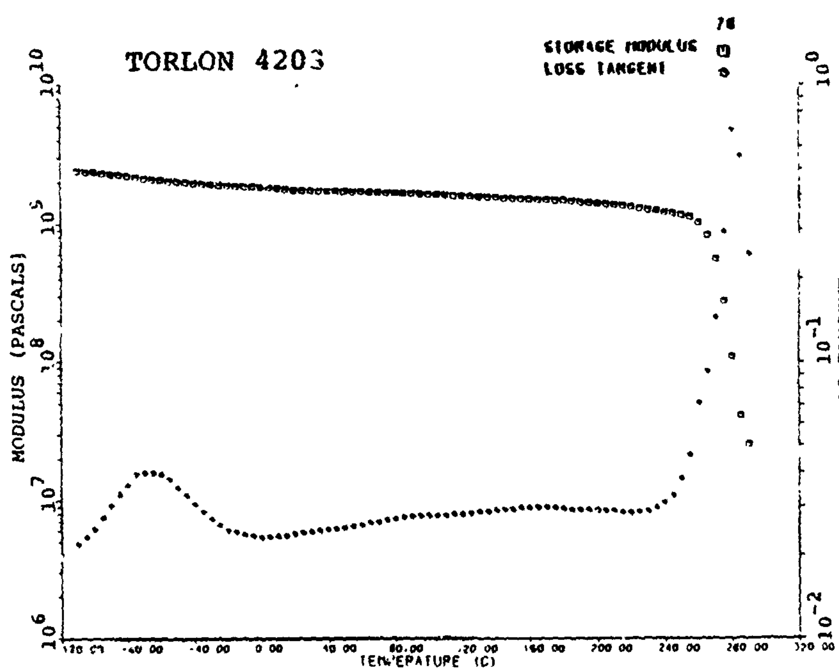


Figure 10. Methylenedianiline Polyamide-imide (Torlon 4203) DMA Storage Modulus and Loss Tangent Curves.

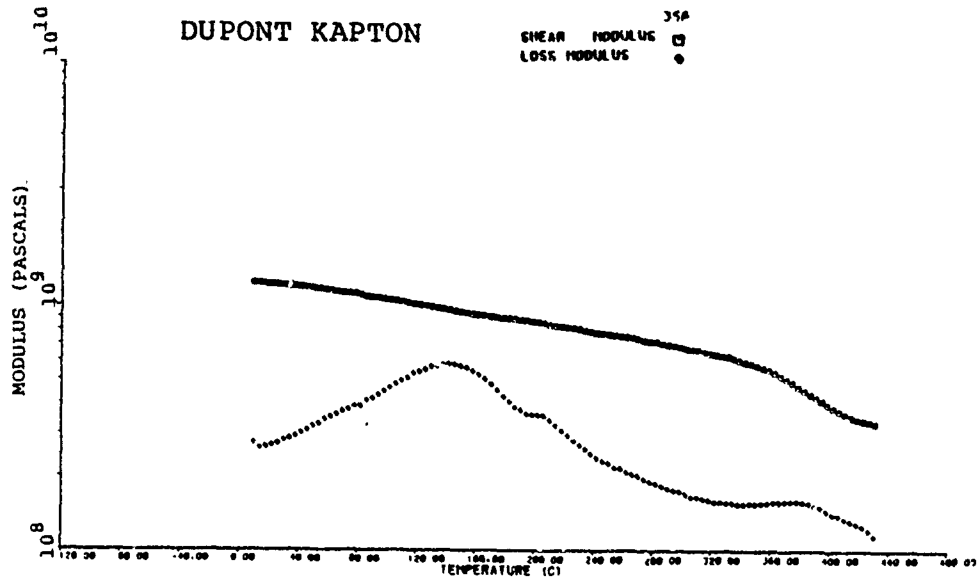


Figure 11. Diaminodiphenylether Polyimide (DuPont Kapton Thermoset) DMA Storage and Loss Modulus Curves.

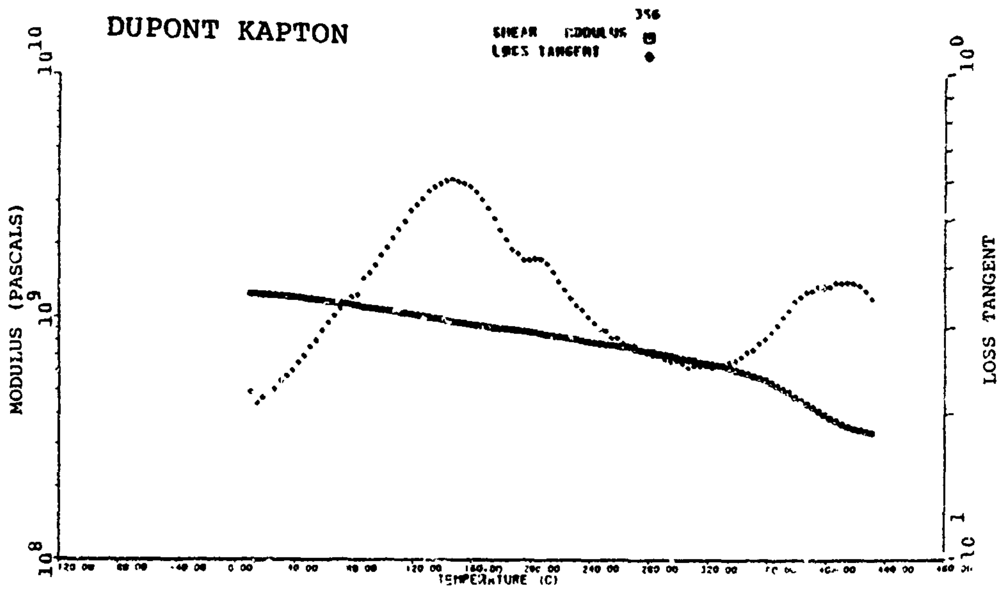


Figure 12. Diaminodiphenylether Polyimide Storage Modulus and Loss Tangent Curves.

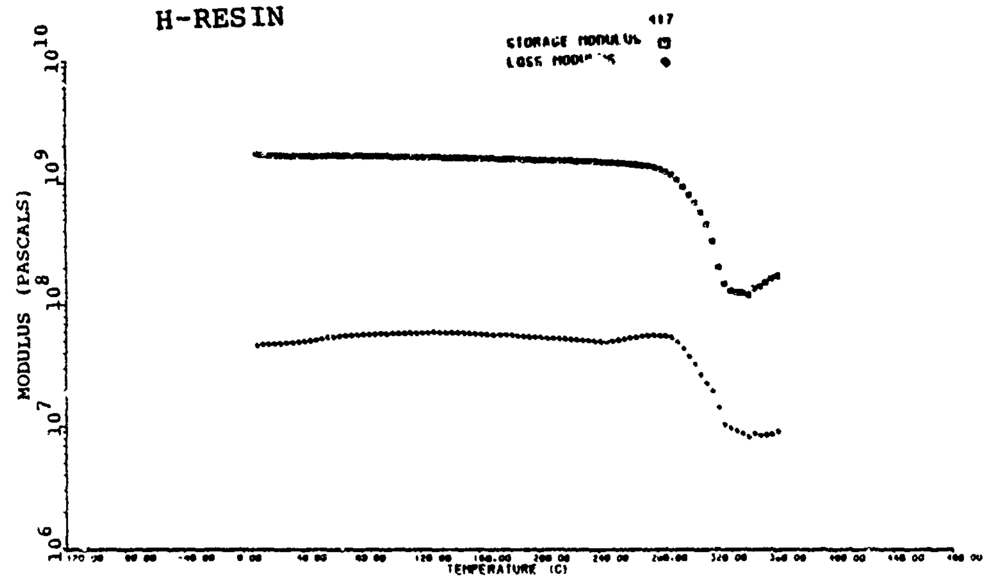


Figure 13. H-Resin DMA Storage and Loss Modulus Data; Sample Cure History: 1 hr. 130°C, 1.5 hr. 180°C, 1.5 hr. 220°C, 16 hr. 270°C.

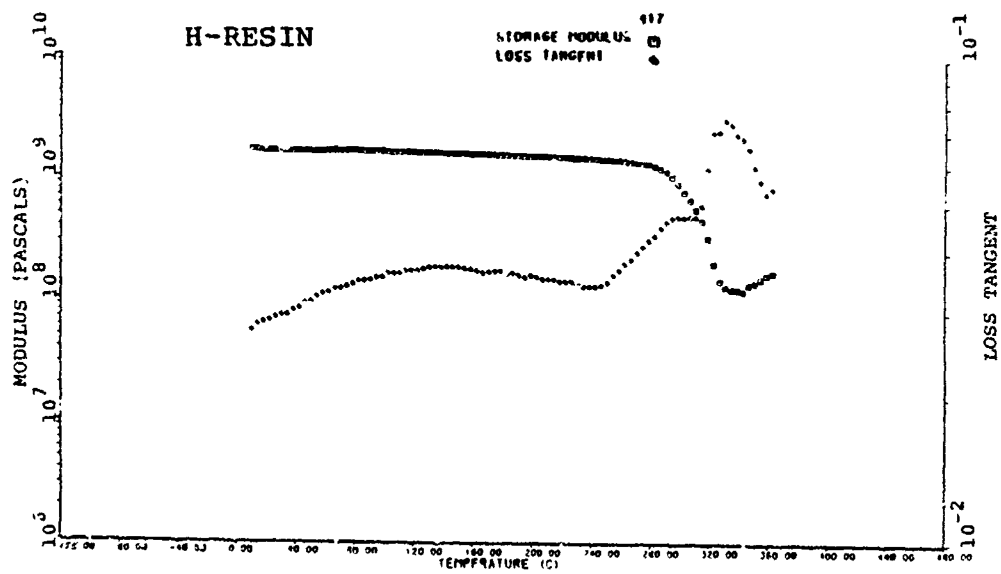


Figure 14. H-Resin Storage Modulus and Loss Tangent Data; Sample Cure History Same as Cited in Figure 13.

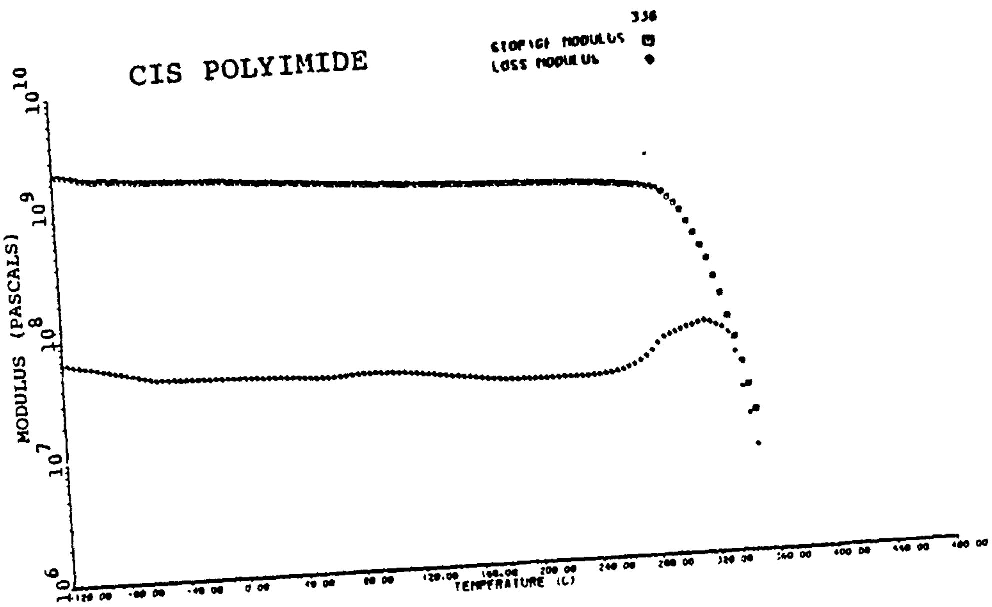


Figure 15. Cis-Polyimide DMA Storage and Loss Modulus Data.

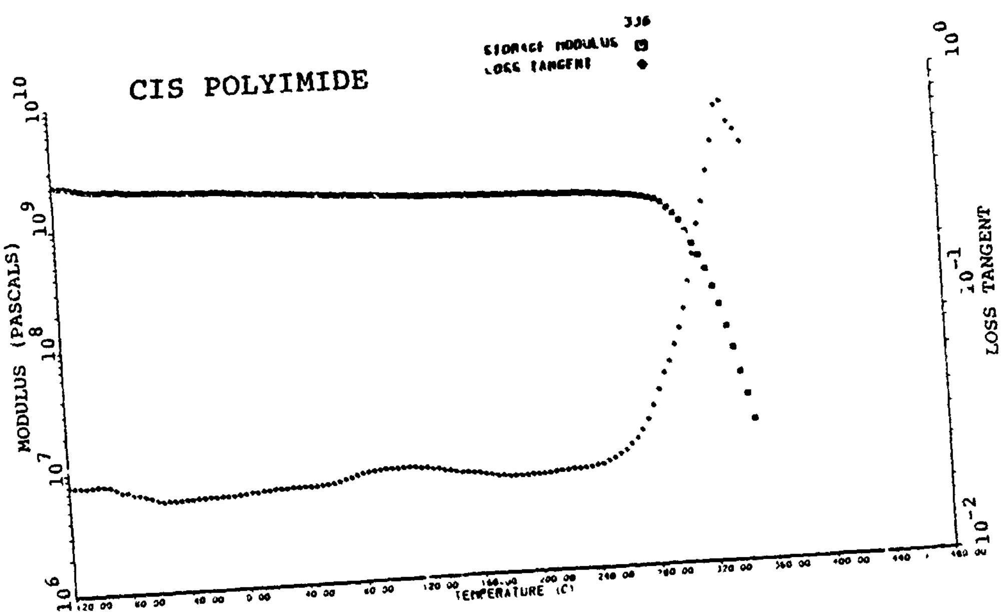


Figure 16. Cis-Polyimide Storage Modulus and Loss Tangent Data.

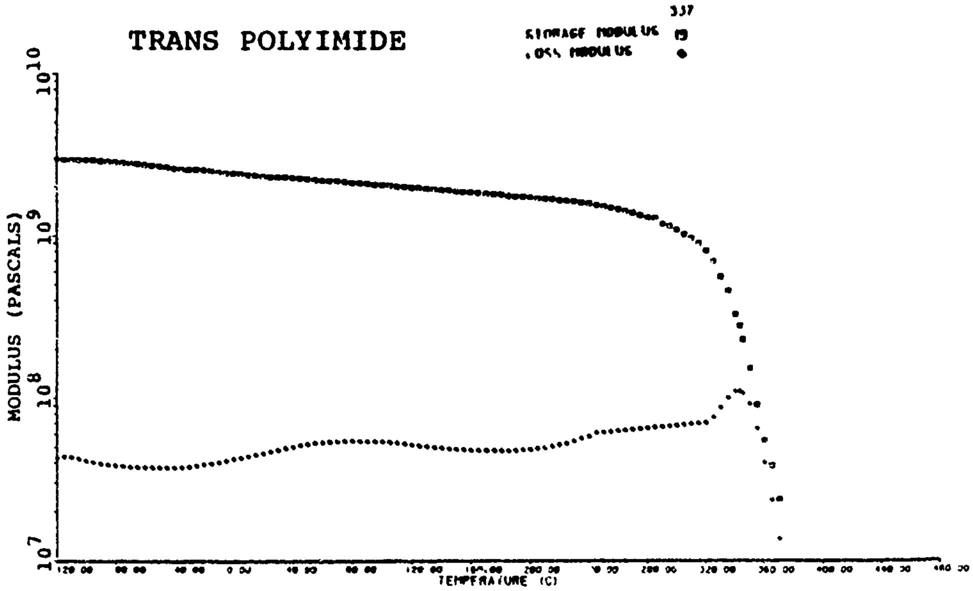


Figure 17. Trans-Polyimide DMA Storage and Loss Modulus Data.

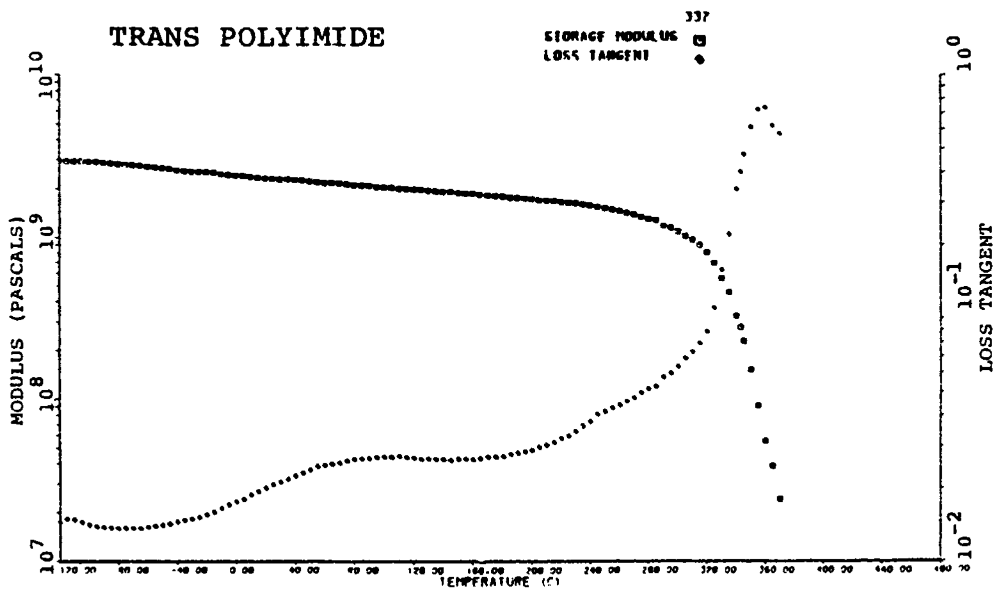


Figure 18. Trans-Polyimide Storage Modulus and Loss Tangent Data.

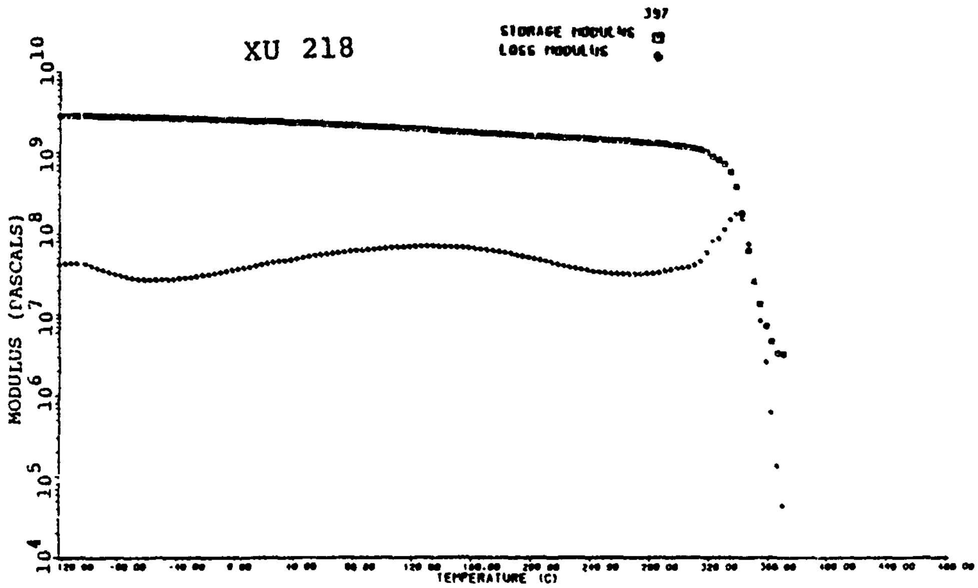


Figure 19. XU-218 DMA Storage and Loss Modulus Data.

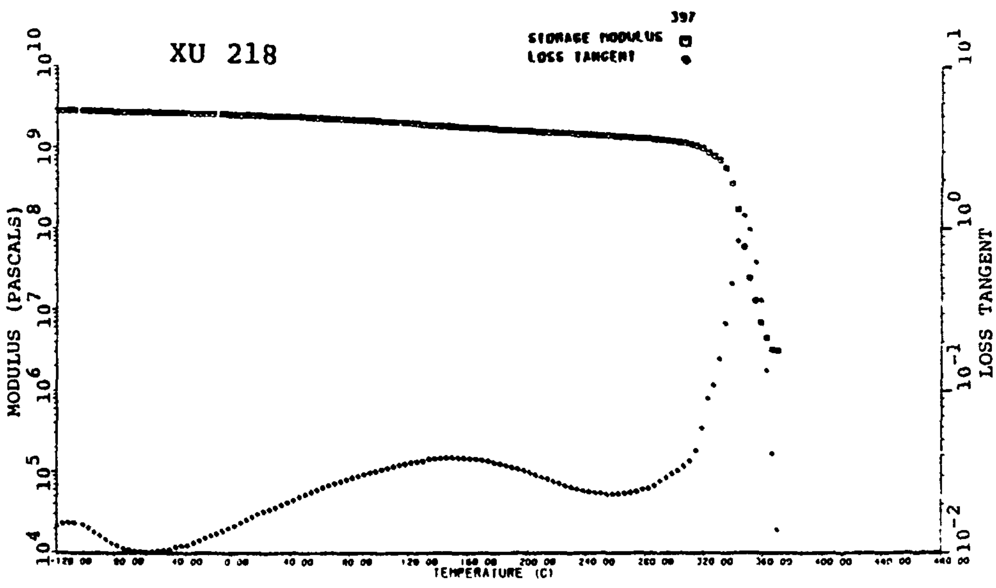


Figure 20. XU-218 Storage Modulus and Loss Tangent Data.

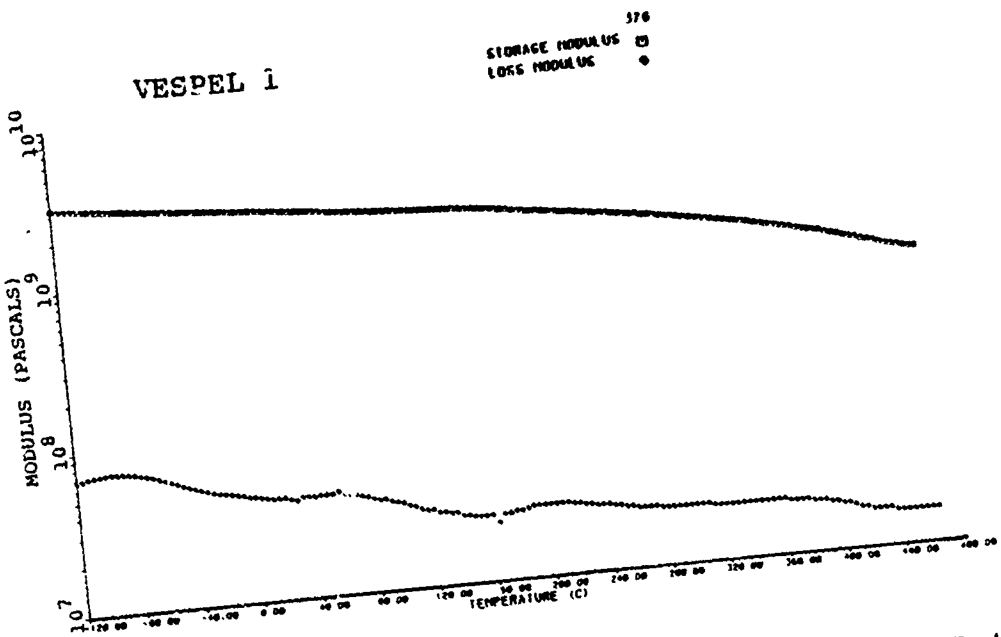


Figure 21. Vespel 1 DMA Storage and Loss Modulus Data.

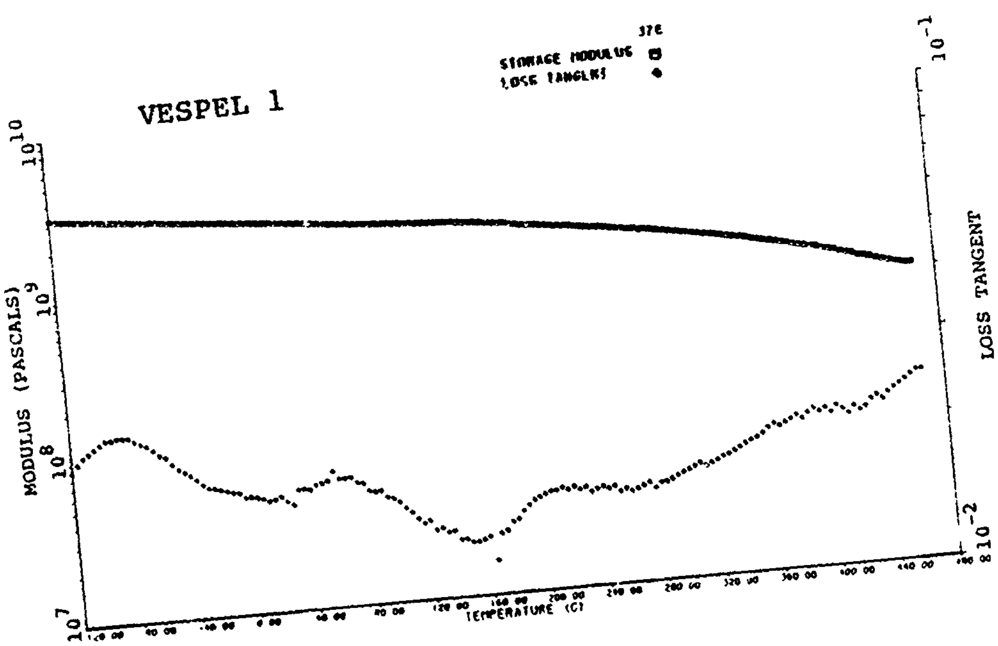


Figure 22. Vespel 1 Storage Modulus and Loss Tangent Data.

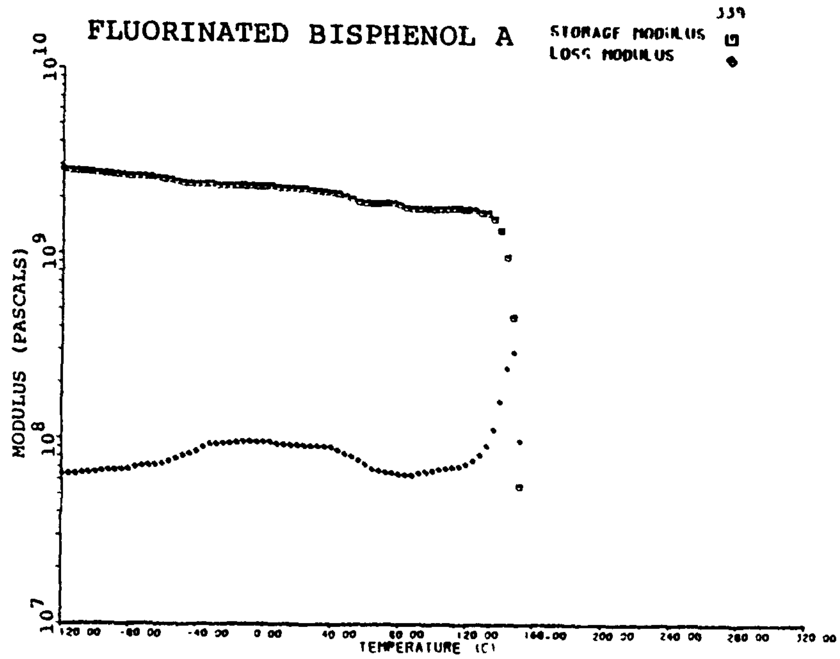


Figure 23. Fluorinated Bisphenol-A DMA Storage and Loss Modulus Data.

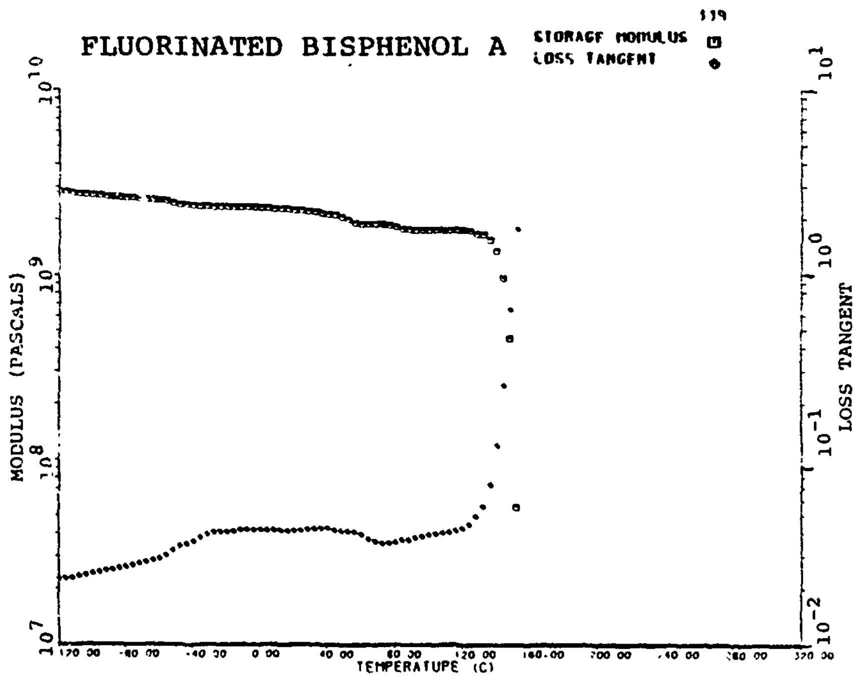


Figure 24. Fluorinated Bisphenol-A Storage Modulus and Loss Tangent Data.

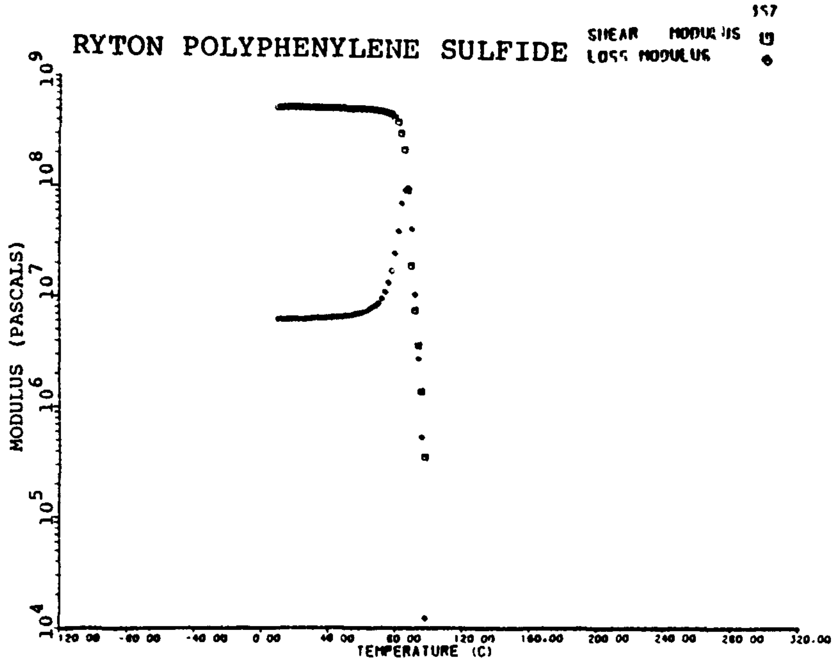


Figure 25. Phillips Ryton Polyphenylene Sulfide DMA Storage and Loss Modulus Data.

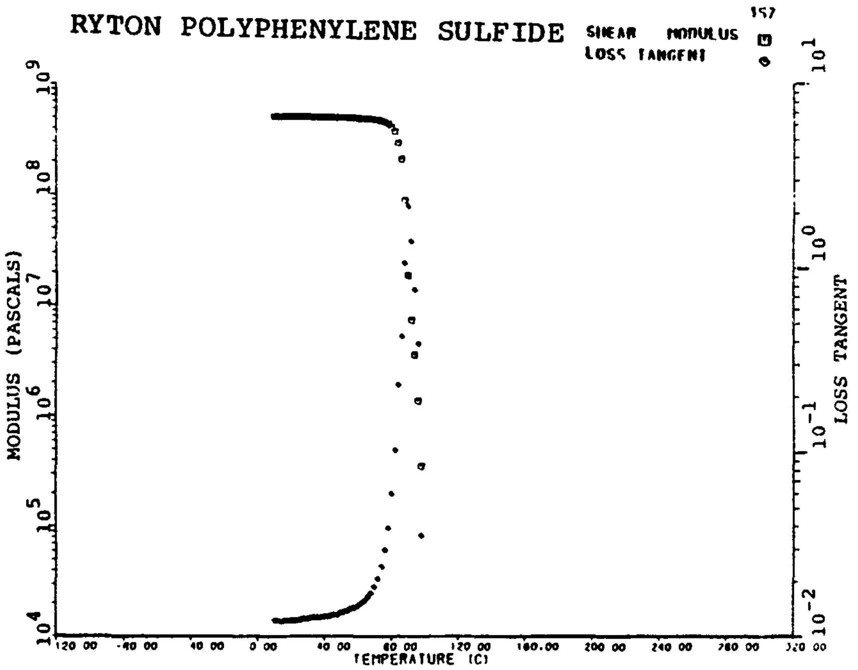


Figure 26. Phillips Ryton Polyphenylene Sulfide Storage Modulus and Loss Tangent Data.

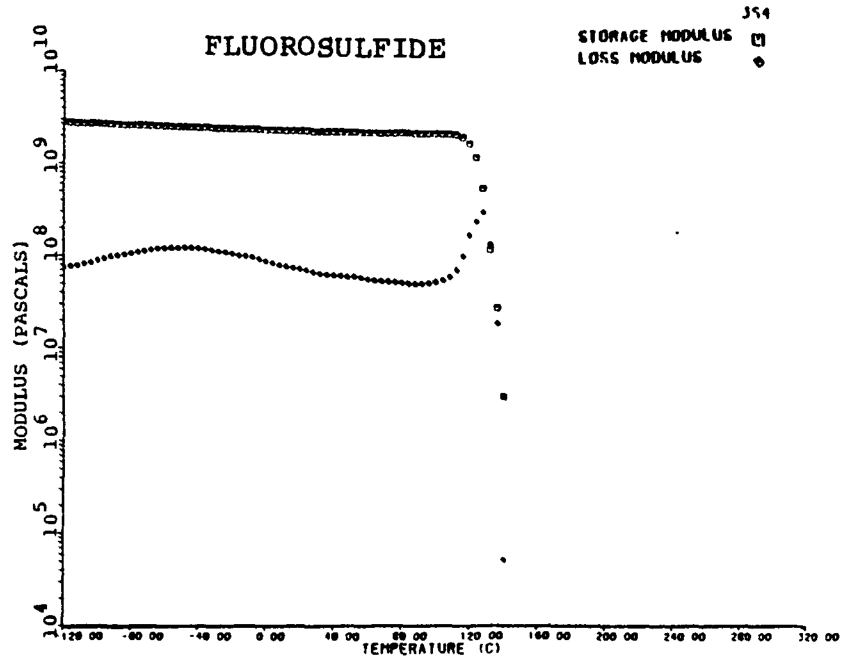


Figure 27. Fluorosulfide DMA Storage and Loss Modulus Data.

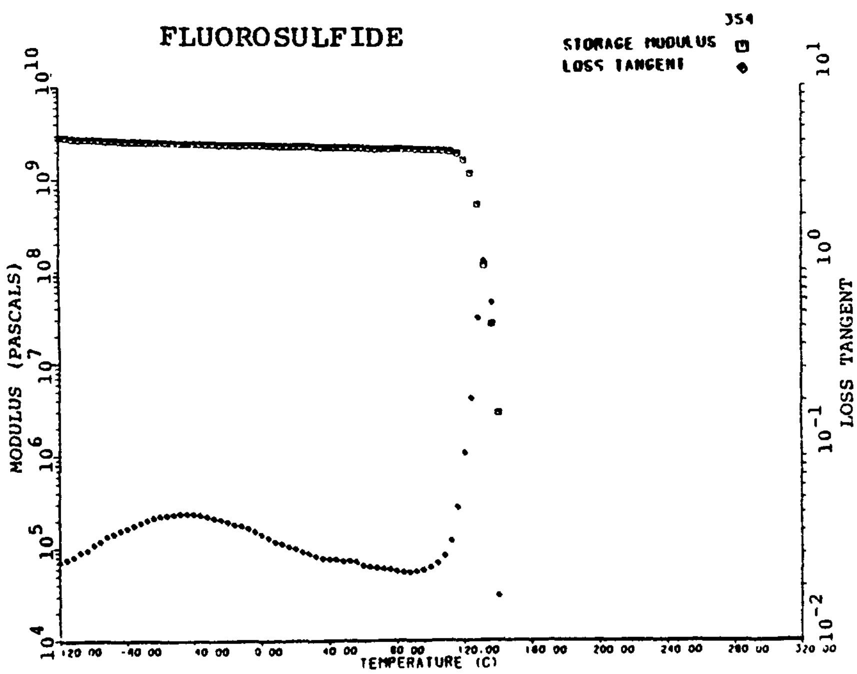


Figure 28. Fluorosulfide Storage Modulus and Loss Tangent Data.

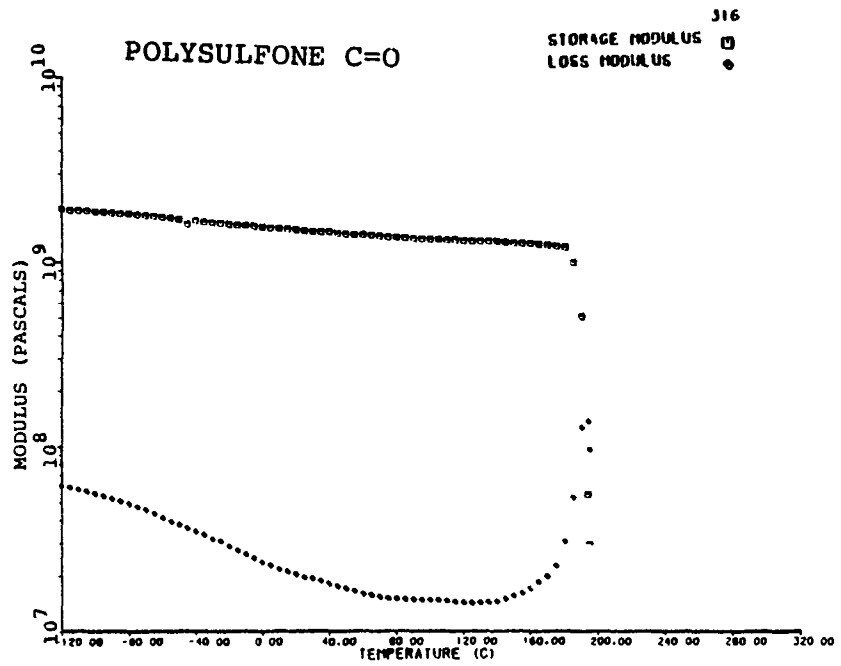


Figure 29. Carbonyl Polysulfone DMA Storage and Loss Modulus Data.

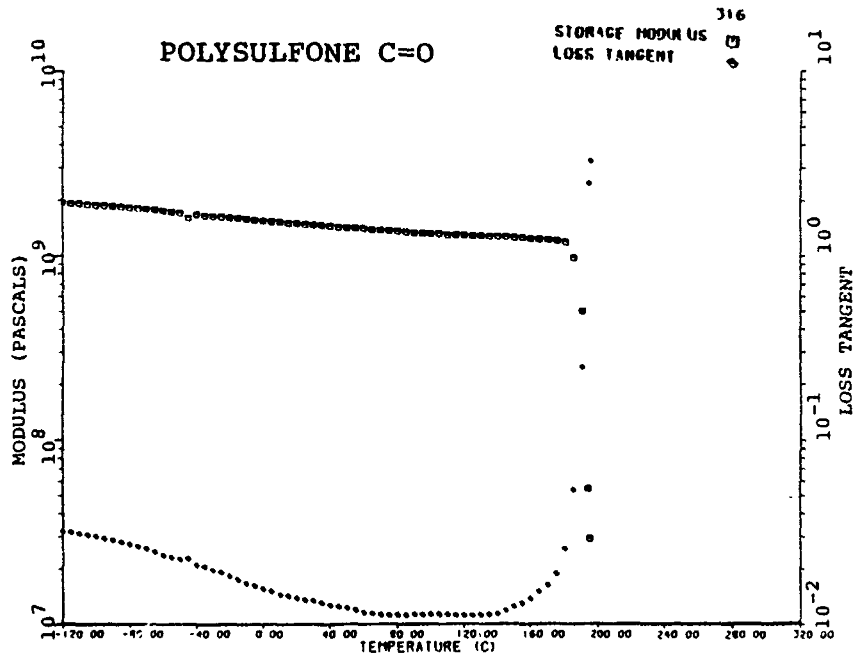


Figure 30. Carbonyl Polysulfone Storage Modulus and Loss Tangent Data.

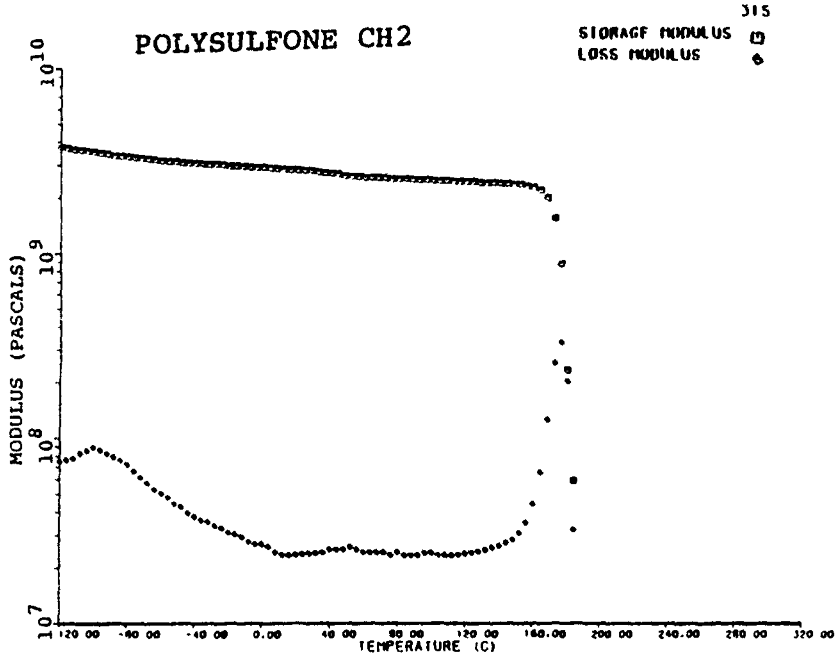


Figure 31. Methylene Polysulfone DMA Storage and Loss Modulus Data.

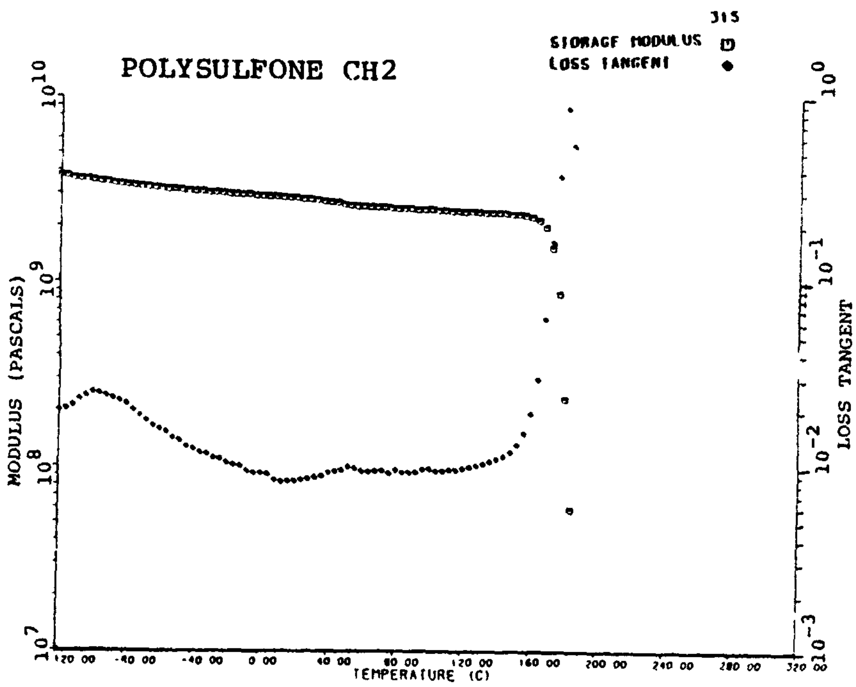


Figure 32. Methylene Polysulfone Storage Modulus and Loss Tangent Data.

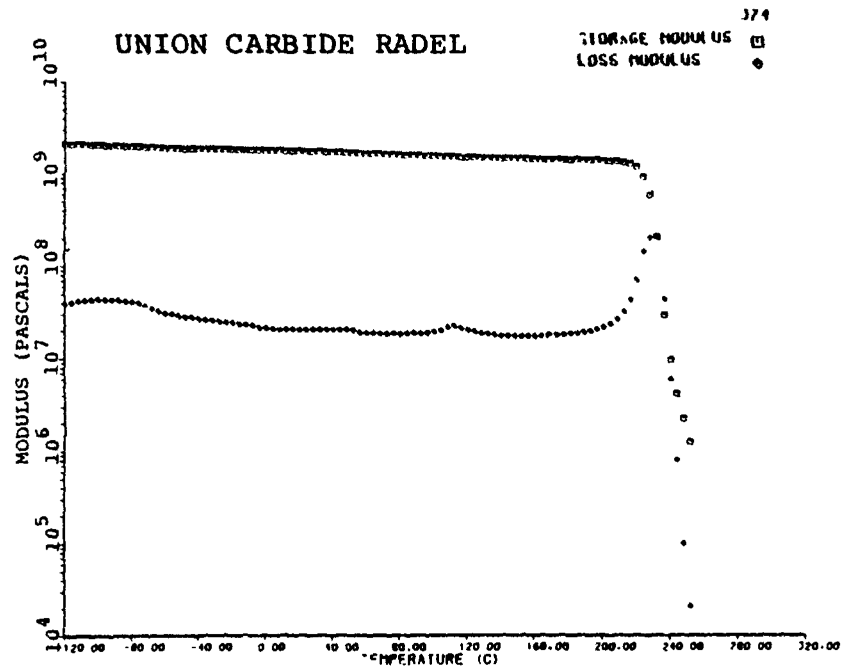


Figure 33. Polyarylethersulfone (Radel) DMA Storage and Loss Modulus Data.

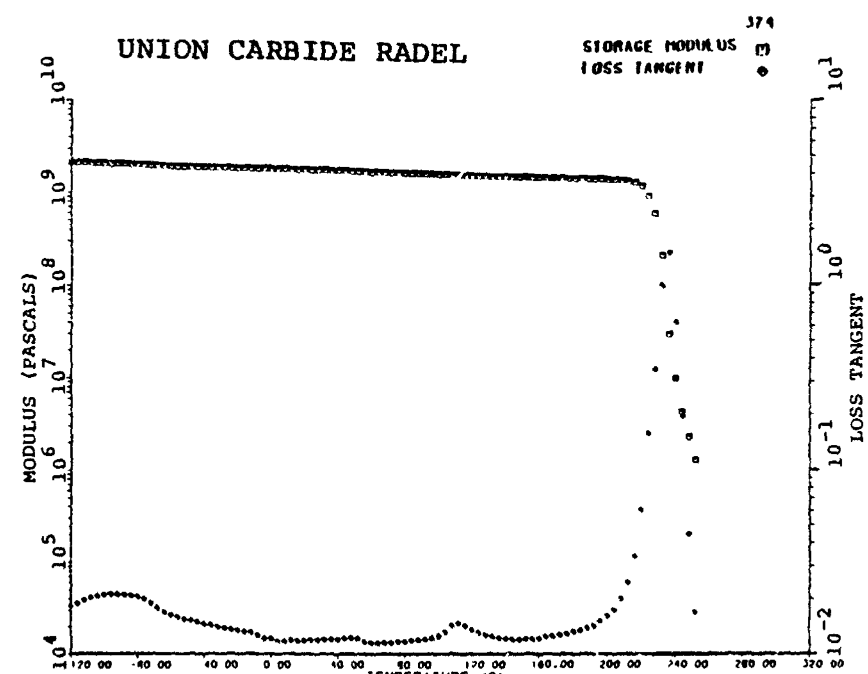


Figure 34. Radel Storage Modulus and Loss Tangent Data.

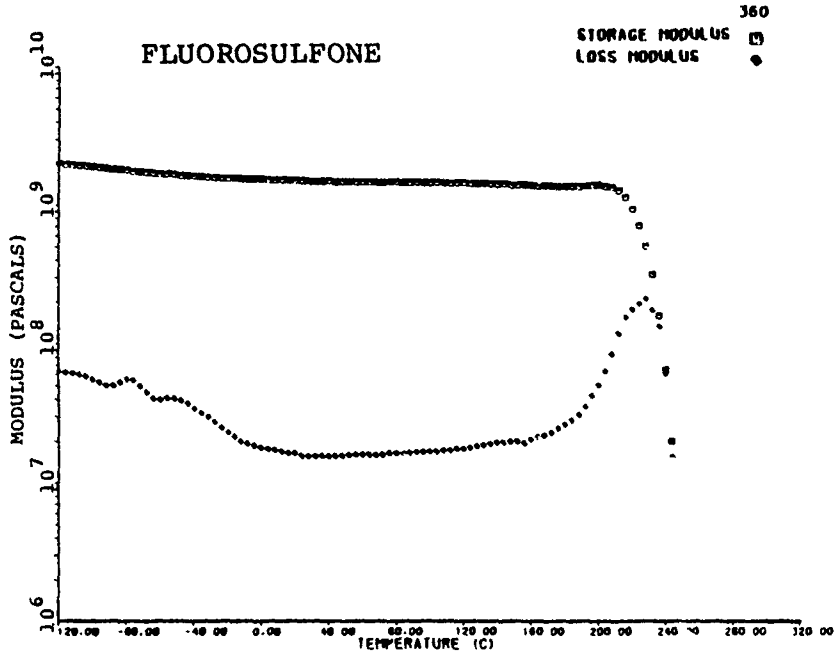


Figure 35. Fluorosulfone Polymer DMA Storage and Loss Modulus Data.

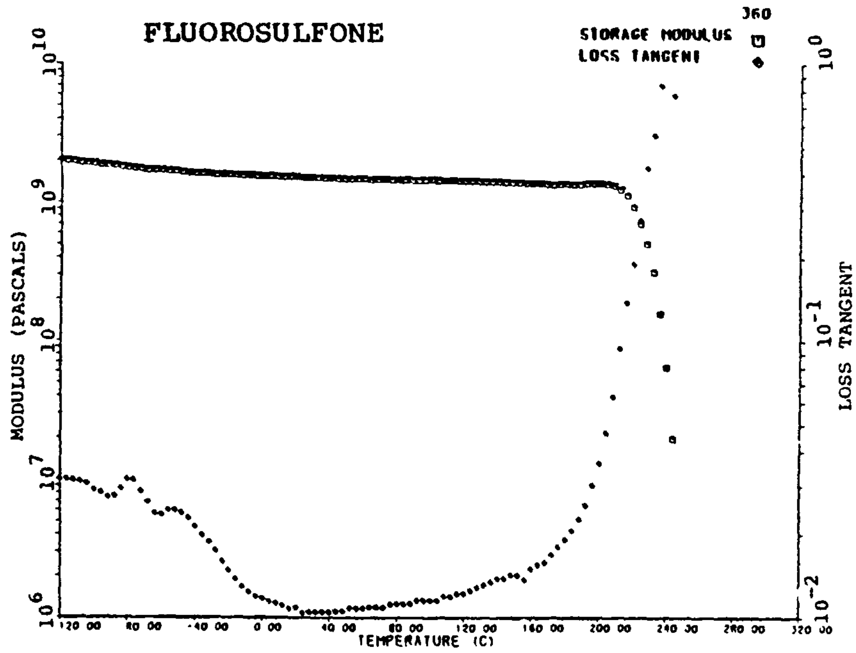


Figure 36. Fluorosulfone Polymer DMA Storage Modulus and Loss Tangent Data.

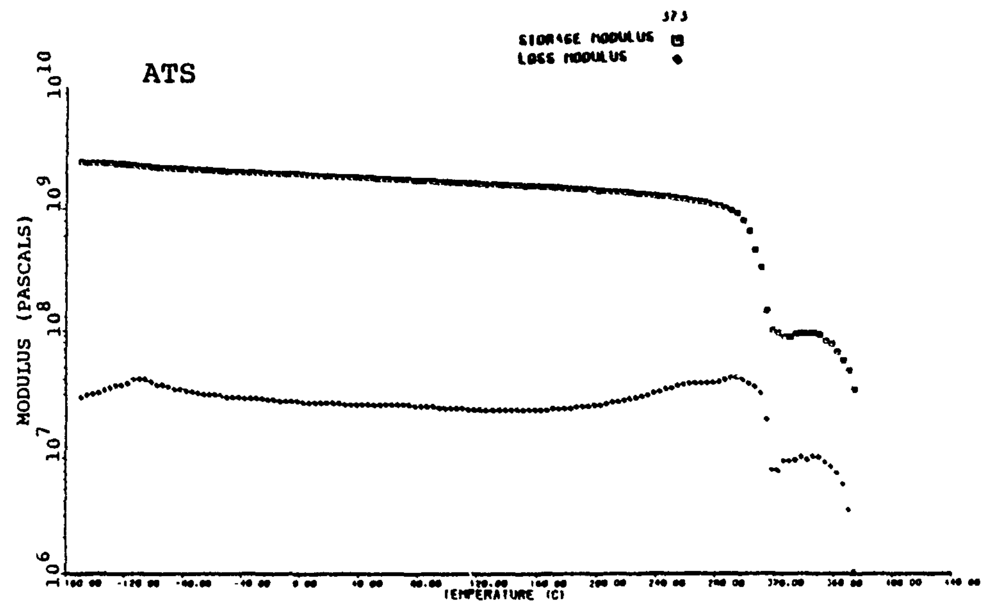


Figure 37. ATS DMA Storage and Loss Modulus Data; Sample cure history: 1 hr. at 125°C, 1 hr. 37 min. at 168°C, 1 hr. 25 to 300°C, 15 min. 300°C to 25°C.

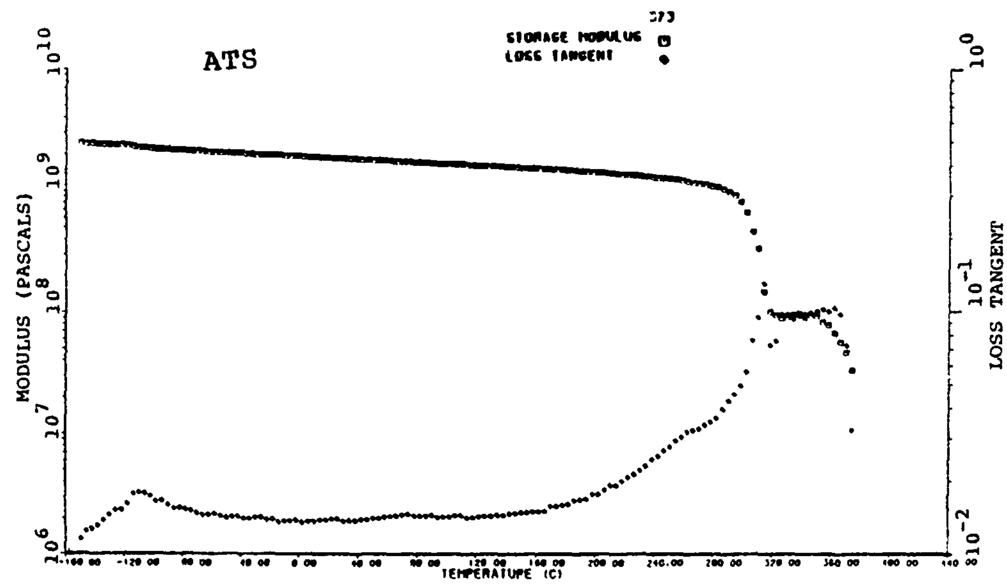


Figure 38. ATS DMA Storage Modulus and Loss Tangent Data, Sample Cure History Same as Cited in Figure 37.

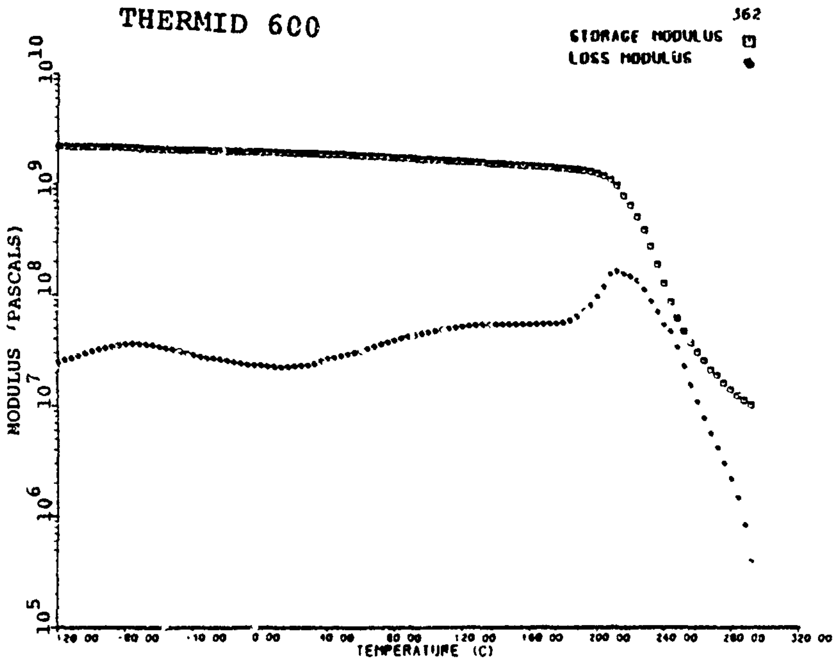


Figure 39. Thermid 600 DMA Storage and Loss Modulus Data; Sample Cure History: 45 min. 121°C, 30 min. 190°C, 1 hr. 316°C, 4 hrs. 343°C.

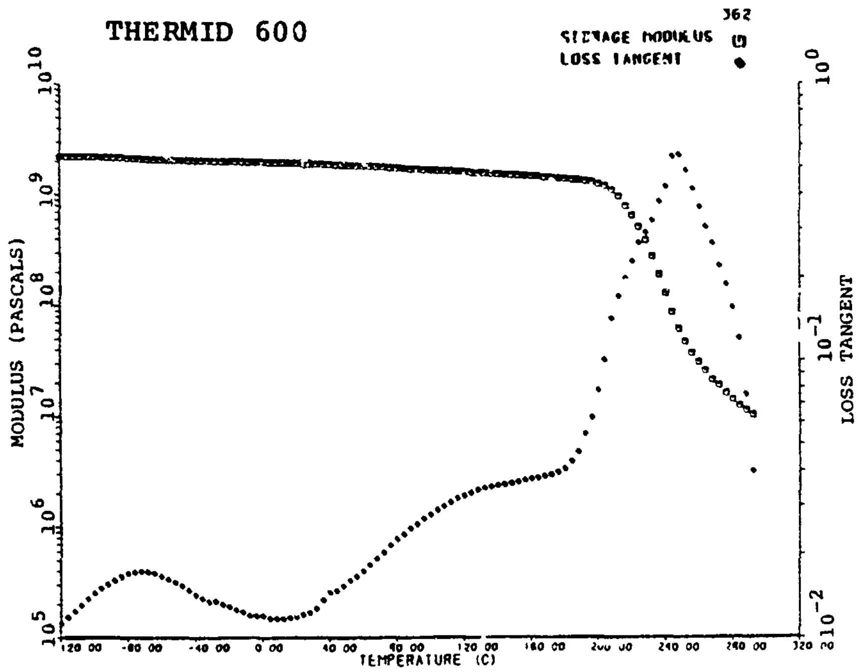


Figure 40. Thermid 600 DMA Storage Modulus and Loss Tangent Data; Sample Cure History Same as Cited in Figure 39.

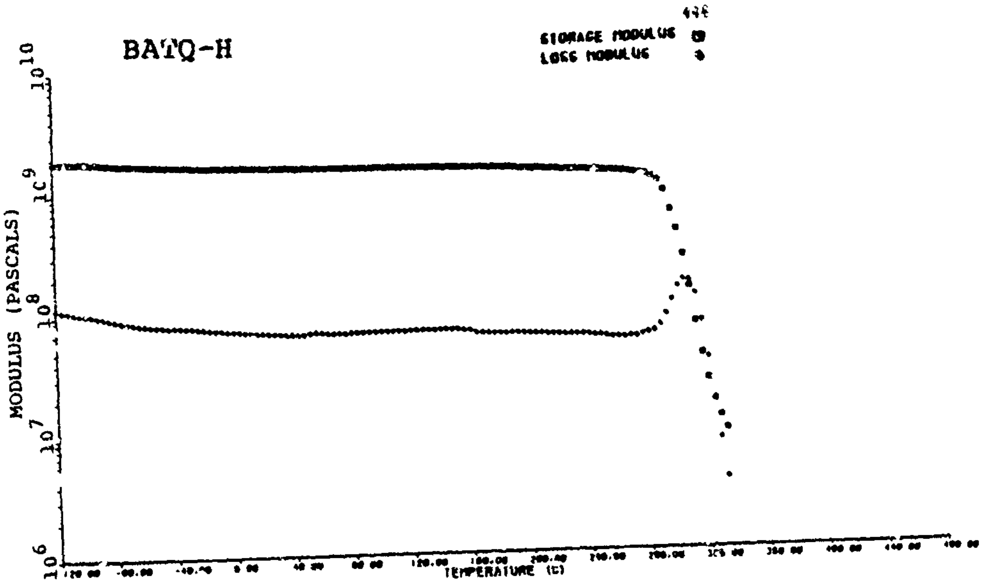


Figure 41. DMA Storage and Loss Modulus Data for BATQ-H: Sample Cure History: 2 hr. 200°C, 1 hr. 300°C.

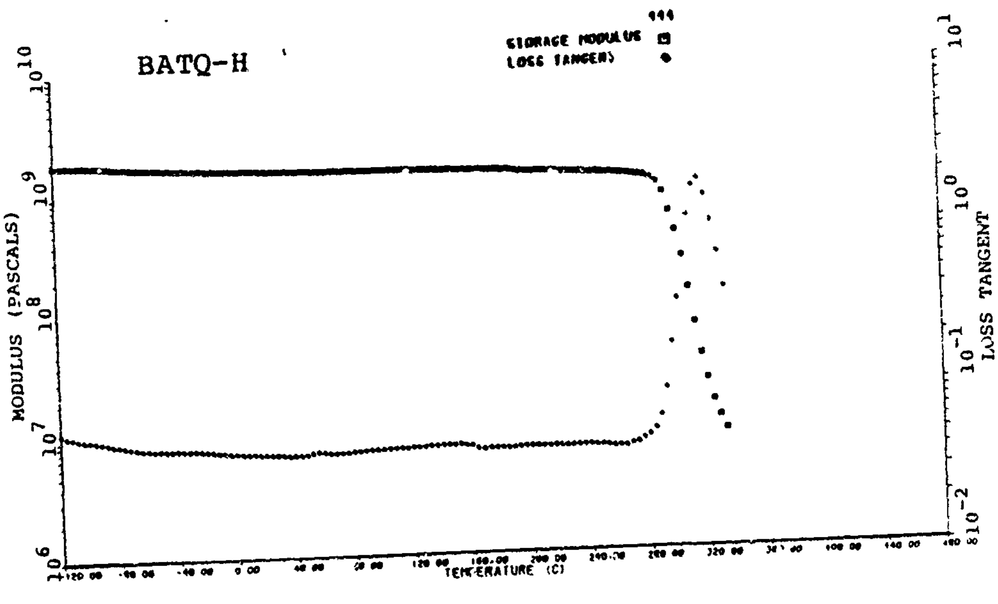


Figure 42. DMA Storage Modulus and Loss Tangent Data for BATQ-H; Sample Cure History Same as Cited in Figure 41.

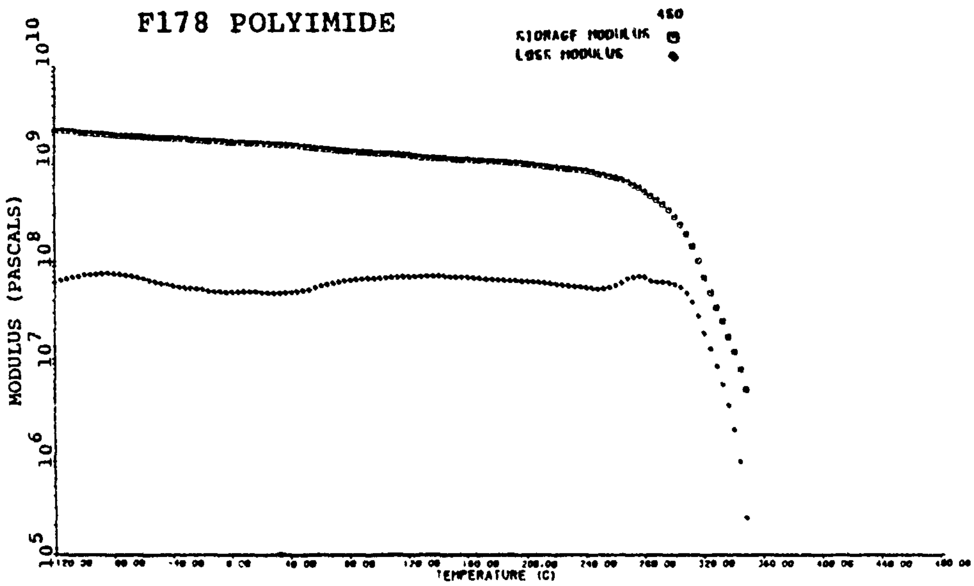


Figure 43. DMA Storage and Loss Modulus Data for F-178 Polyimide; Sample Cure History: 1 hr. 177°C, 2 hr. 246°C.

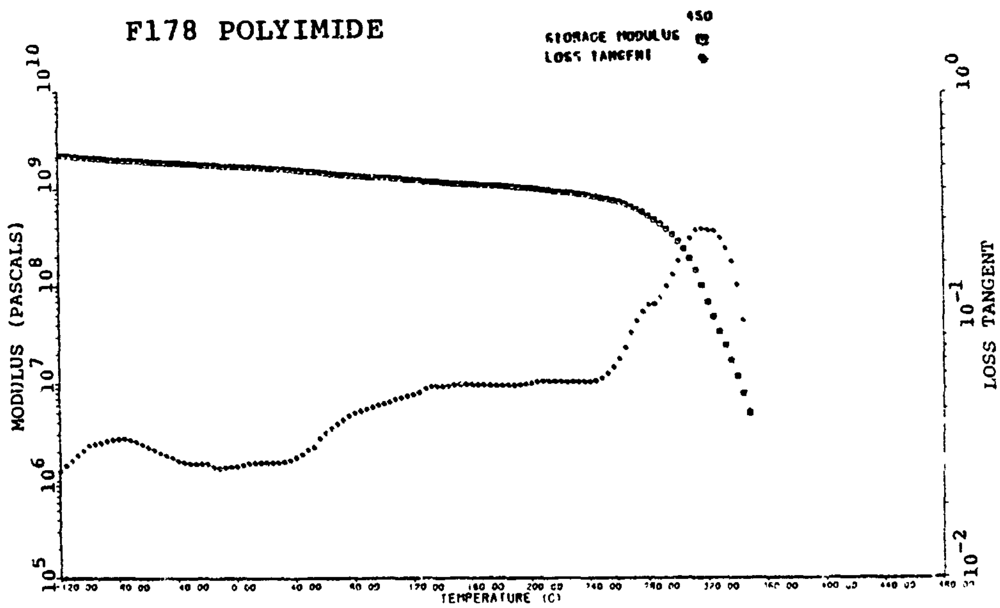


Figure 44. DMA Storage Modulus and Loss Tangent Data for F-178 Polyimide; Sample Cure History Same as Cited in Figure 43.

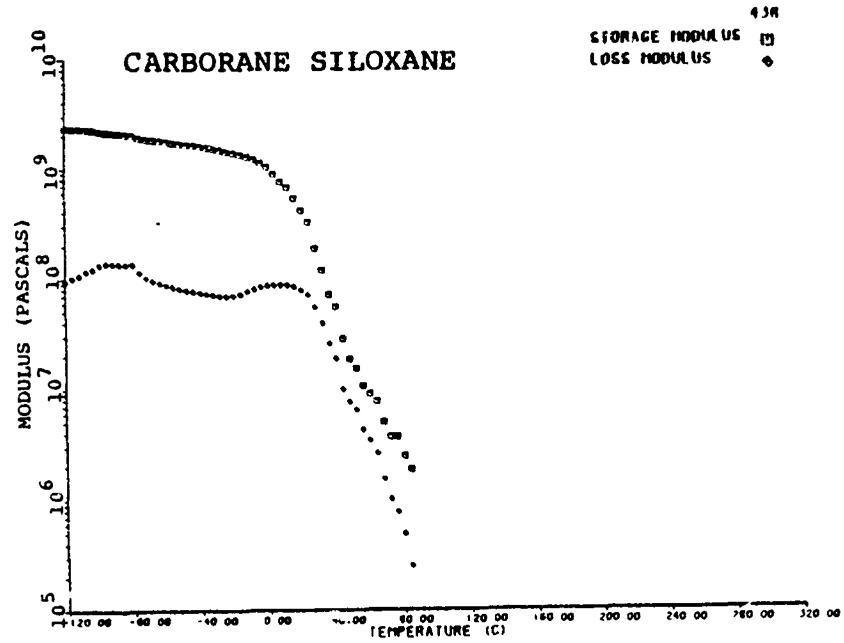


Figure 45. Storage and Loss Modulus Data for m-Carborane Siloxane Elastomer, Crosslinked with 1.5 phr Dicumyl Peroxide.

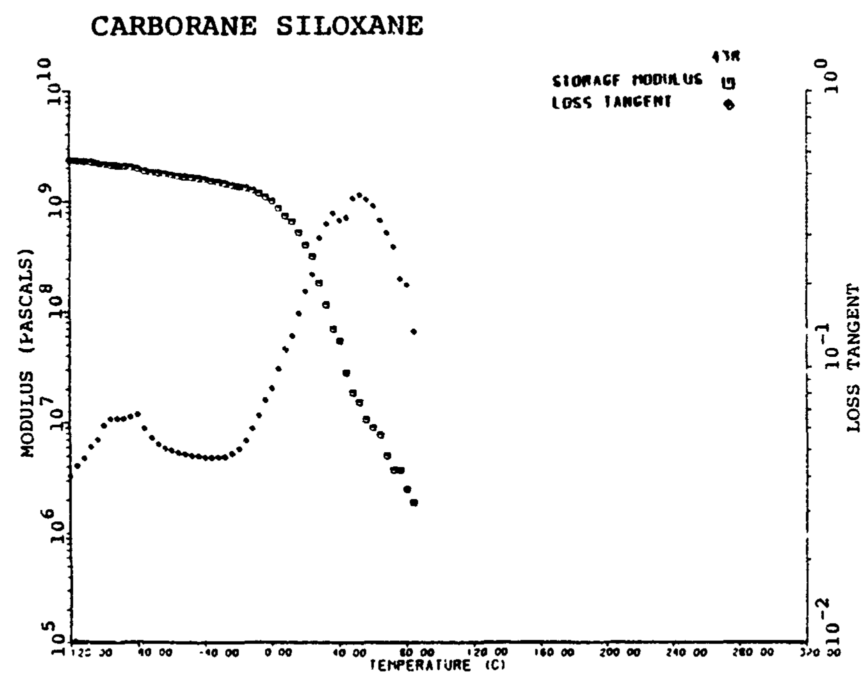


Figure 46. Storage Modulus and Loss Tangent Data for m-Carborane Siloxane Elastomer, Crosslinked with 1.5 phr Dicumyl Peroxide.

TABLE 6

DAMPING PEAK PARAMETERS OF
CHARACTERIZED POLYMERS

Polymer	Loss Modulus†				Loss Tangent†			
	T_1	T_{max}	T_3	E''_{max}	T_1	T_{max}	T_3	$Tan\delta_{max}$
Upjohn 2080	290	330	340	$2.8x10^8$	290	340	390	0.60
Torlon 4203	235	275	285	$8.0x10^7$	235	280	325	0.69
Kapton (shear)*	28	142	228	$5.8x10^8$	28	146	264	0.60
Udel P-1800	135	190	195	$3.5x10^8$	135	190	235	1.30
Victrex 200-P	180	234	240	$3.5x10^8$	188	238	288	1.21
Astrel 360	260	305	314	$4.0x10^8$	260	310	360	0.69
H-Resin	250	276	294	$5.2x10^7$	244	336	---	0.073
Polyimide #2-cis	248	316	338	$7.8x10^7$	248	334	420	0.45
Polyimide #2-trans	300	343	355	$1.1x10^8$	295	360	425	0.73
XU 218	288	338	350	$1.7x10^8$	288	346	368	1.21
Vespel	---------No loss maxima recorded-----------------							
Fluorinated Bisphenol	112	148	152	$2.9x10^8$	118	148	178	0.64
Ryton	44	88	94	$9.3x10^7$	48	90	132	0.21
Fluorosulfide	94	130	134	$3.1x10^9$	90	128	166	0.56
Carbonyl Polysulfone	140	194	195	$1.4x10^8$	140	190	240	0.25
Methylene Polysulfone	142	174	184	$3.3x10^8$	142	180	218	0.87
Radel	192	230	238	$2.2x10^8$	186	234	282	1.63
Fluorosulfone	158	228	244	$2.1x10^8$	168	240	312	0.94
ATS	168	292	314	$4.0x10^7$	168	314	460	0.13
HR 600	178	212	240	$1.6x10^8$	180	246	312	0.57
BATQ-H	270	306	316	$1.6x10^8$	270	314	---	1.86
F-178 Polyimide	248	276	306	$7.1x10^7$	240	322	348	0.29
Carborane Siloxane	-22	6	26	$8.5x10^7$	-28	54	---	0.43

†T_1 and T_3 are temperature values in °C representing the width of the T_g loss dispersion by taking the point where the loss dispersion begins (T_1) and the intersection of a horizontal line from that point to the high temperature portion of the loss curve (T_3).

*Kapton is a highly crosslinked and does not have an intense T_g transition; it does have a broad $T<T_g$ transition (β transition) with good damping properties in the temperature range indicated here.

TABLE 7

POLYIMIDE GLASS TRANSITION VALUES

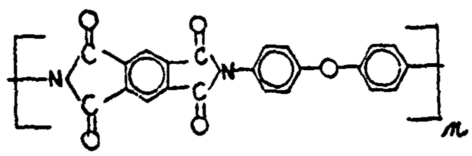
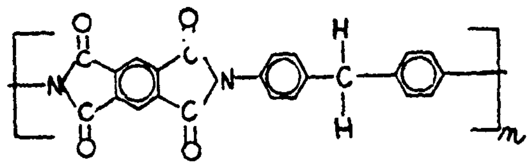
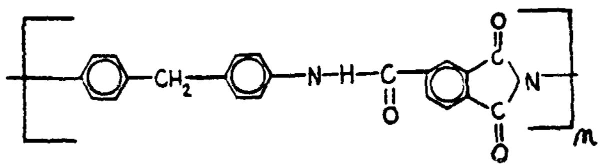
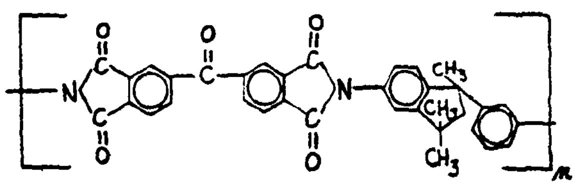
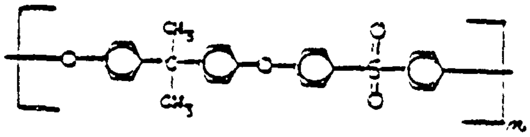
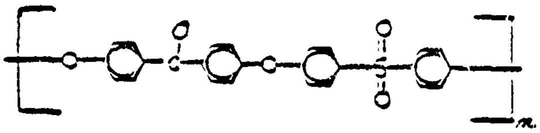
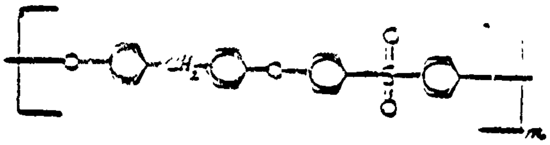
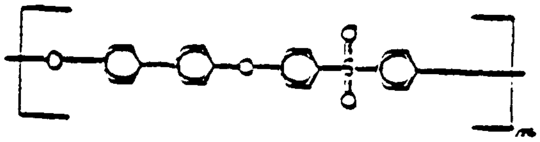
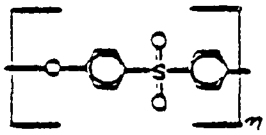
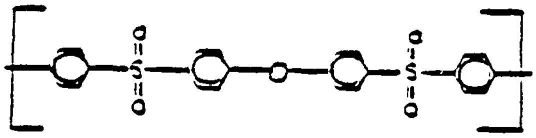
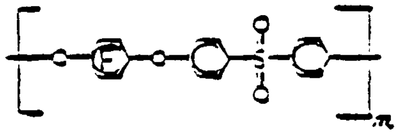
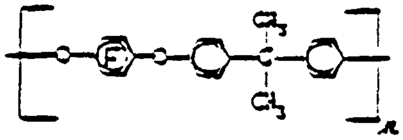
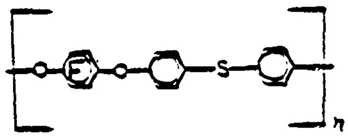
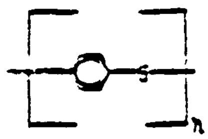
	Structure	T_g(°C)
Kapton		406
2080		340
Torlon 4000		280
XU 218		346

TABLE 8

POLYSULFONE (AND RELATED POLYMER) GLASS TRANSITION VALUES

Polymer Structure	T_g (°C)
	185
	190
	180
	234
	242
	310
	240
	148
	128
	88

range. Each of these materials does have a rather narrow damping range.

The DMA data indicate that the polymers studied have similar damping properties with respect to: (1) glassy state loss factor and modulus values; (2) peak damping intensity; and (3) width of the damping peak. This is most likely due to the fact that all of these materials have similar aromatic chain backbone structures. However, we note that the glass transition temperature varies widely within the targeted temperature range depending on the specific chain structural units present.

Because of the wide range of T_g values, however, the possibility of designing layered damping configurations containing two or more of the cited polymers is a viable one. A damping design of this type would effectively cover a broad temperature range making use of an overlap of the damping ranges of each polymer.

Variations in the effective damping temperature range for members of different polymer classes are illustrated in Figures 47 through 52 which are composite plots that compare the properties of three polymers. These demonstrate clearly that while T_g in each case covers a relatively narrow region, a broad temperature range can be covered by superimposing the damping response of more than one material.

It should be noted that Kapton has a much different damping profile because it is crosslinked. Here the T_g transition has a very broad but minor loss maximum, while a secondary transition at lower temperatures has a more intense loss maximum that is also quite broad. The $T<T_g$ transition noted here may be associated with bulky chain branches within the crosslinked polymer network that give rise to a distinct lower temperature relaxation process. Determining its origin is certainly worth some additional study.

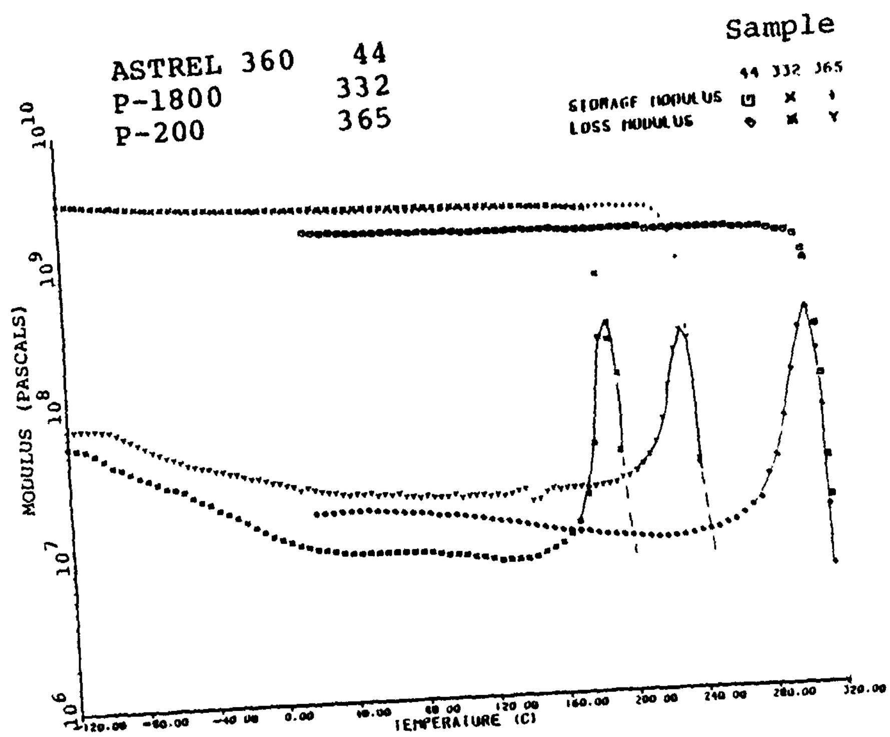


Figure 47. DMA Storage and Loss Modulus Data for Three Polysulfones; Structures are Shown in Table 3.

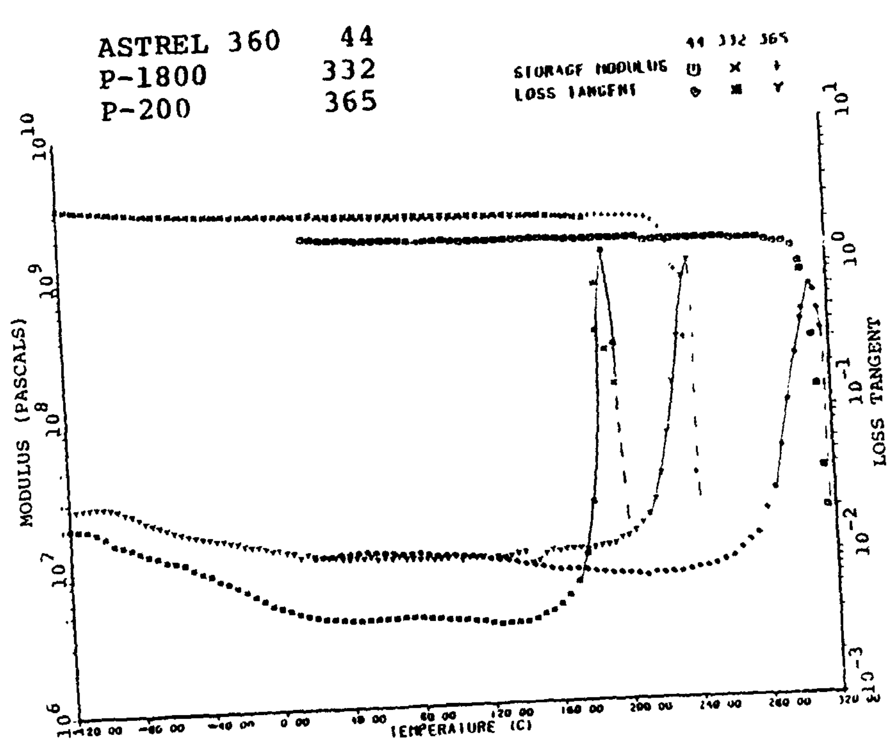


Figure 48. DMA Storage Modulus and Loss Tangent Data for Three Polysulfones.

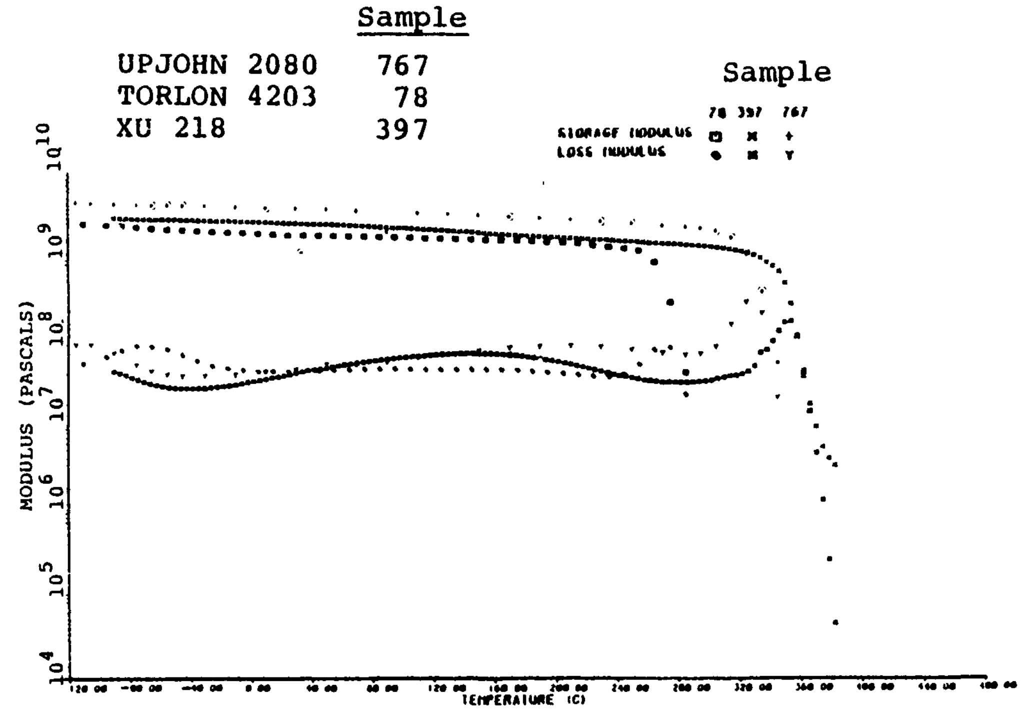


Figure 49. DMA Storage and Loss Modulus Data for Three Polyimides.

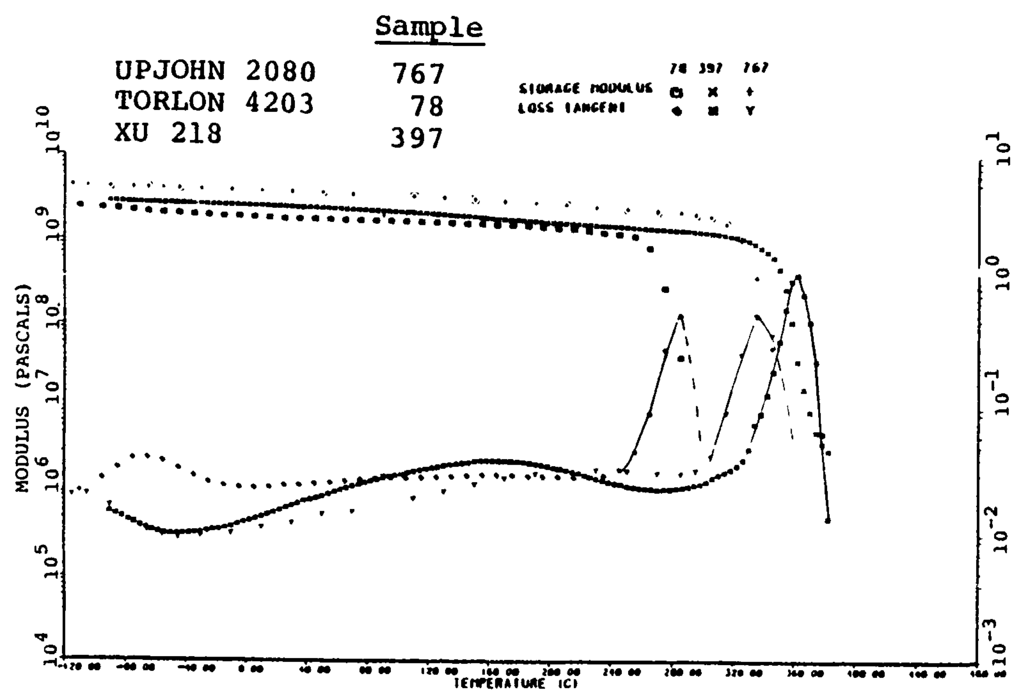


Figure 50. DMA Storage Modulus and Loss Tangent Data for Three Polyimide~.

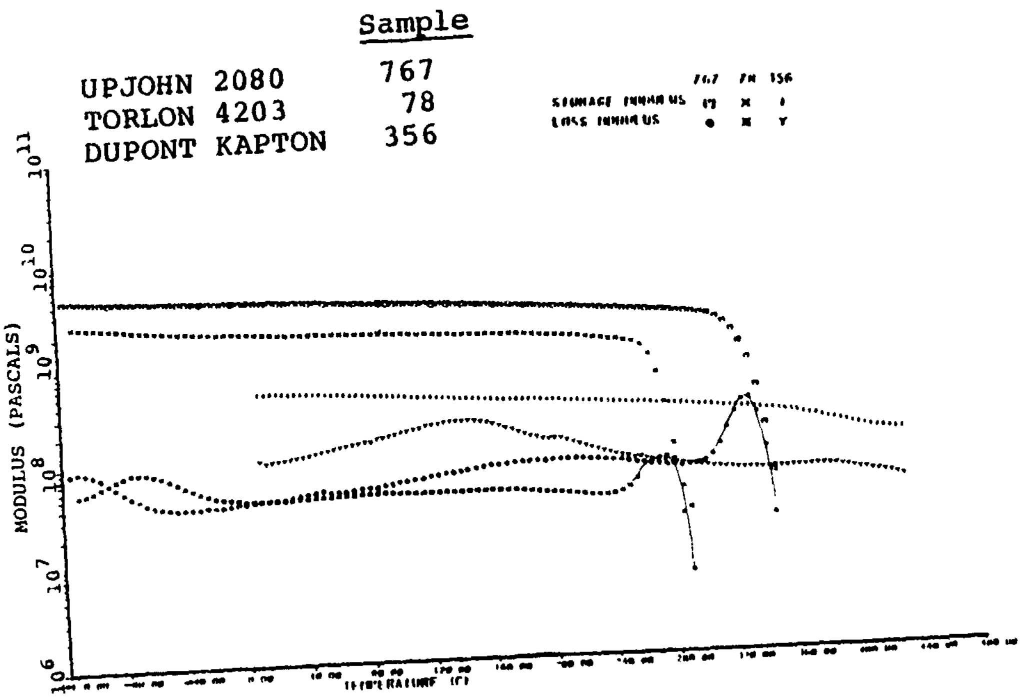


Figure 51. DMA Storage and Loss Modulus Data for Three Polyimides; Structures are Shown in Table 2.

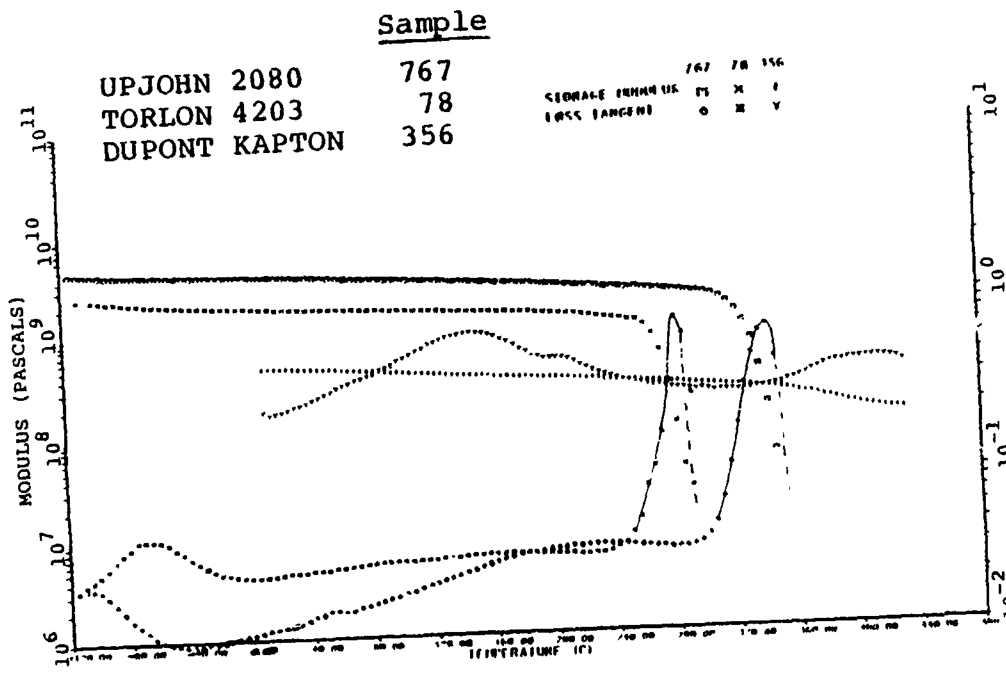


Figure 52. DMA Storage Modulus and Loss Tangent Data for Three Polyimides.

3. TGA THERMAL STABILITY EVALUATION

TGA curves for the polymers cited previously in Table 6 are presented in Figures 53 through 75. Measurements were carried out in both air and nitrogen atmospheres. The data indicate in particular excellent thermal stability in terms of weight loss for most polysulfones and polyimides at temperatures in excess of 400°C. Polyimides typically lose a few percent of weight at temperatures above 100°C due to release of absorbed moisture. This is not a structural degradation effect and is a completely reversible process.

Because of their good damping properties, excellent thermal stabilities, and availability these two classes of polymers were selected at this point in the program for further study and analysis including long-term thermal aging evaluation. These experiments will be discussed further in subsequent paragraphs.

In order to judge relative thermal stabilities in relation to T_g values we have defined a decomposition temperature, T_d, as the temperature where 10 percent weight loss was observed in the TGA experiment conducted in air. These values are listed in Tables 9 and 10 along with ΔT, the difference between T_d and T_g. For the polysulfones and related polymers ΔT values are quite large. Those for the polyimides are smaller although several have ΔT values of approximately 200°C.

Using these ΔT values as a guide to the relative useful temperature range above T_g for various polymers must be done with some caution. Although such comparisons are valuable it must be noted that a 10 percent weight loss may signify a significant change in the chemical structure of the polymer. Moreover, because TGA only measures weight loss, structural changes that do not involve weight loss are not observed by TGA. Thus significant crosslinking in some polymers may occur at temperatures below T_d without any noticeable weight loss. These chemical changes will necessarily result in damping property changes as well. In order to be certain in each case

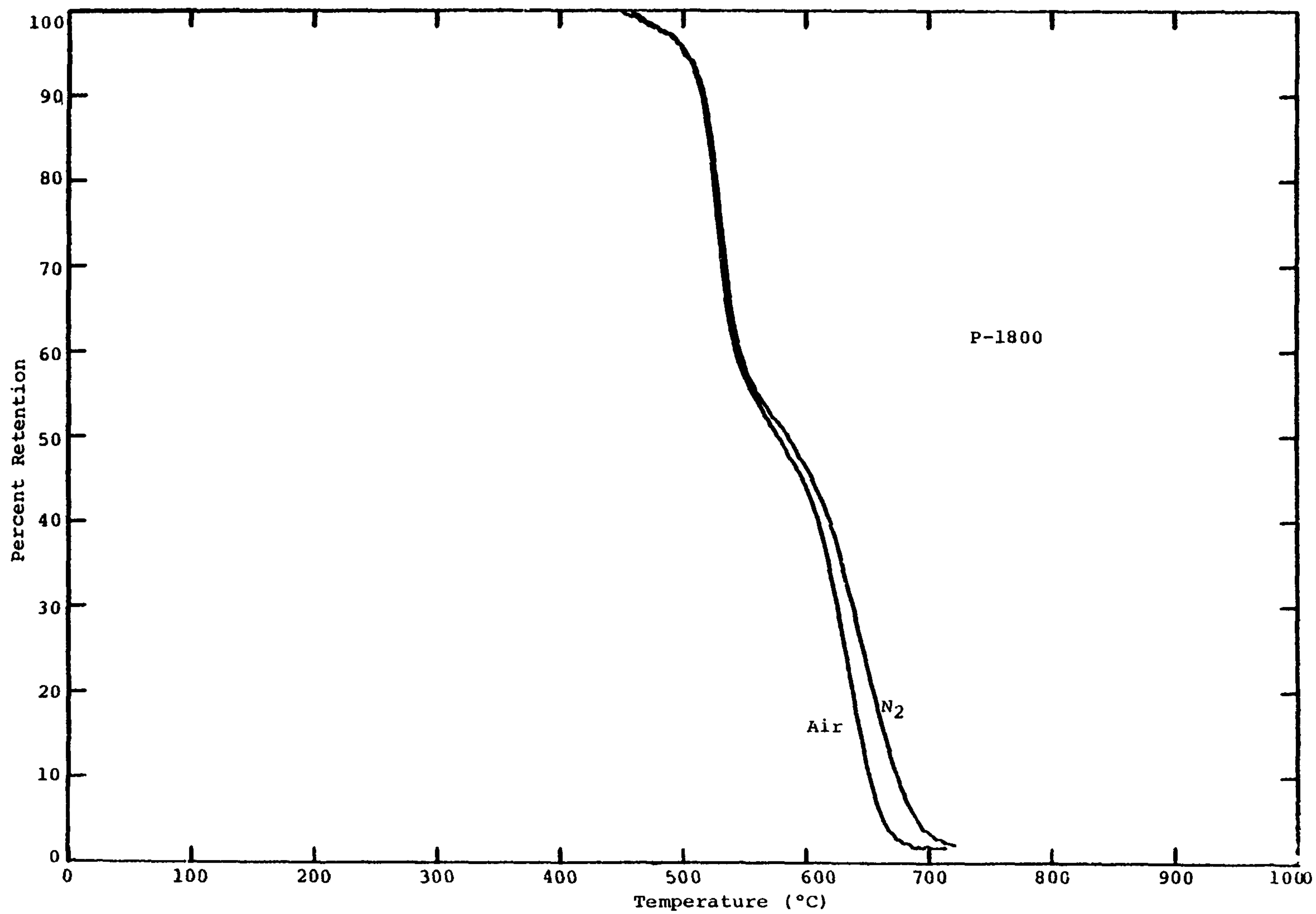


Figure 53. TGA Weight Loss Thermograms for P-1800 Bisphenol-A Polysulfone.

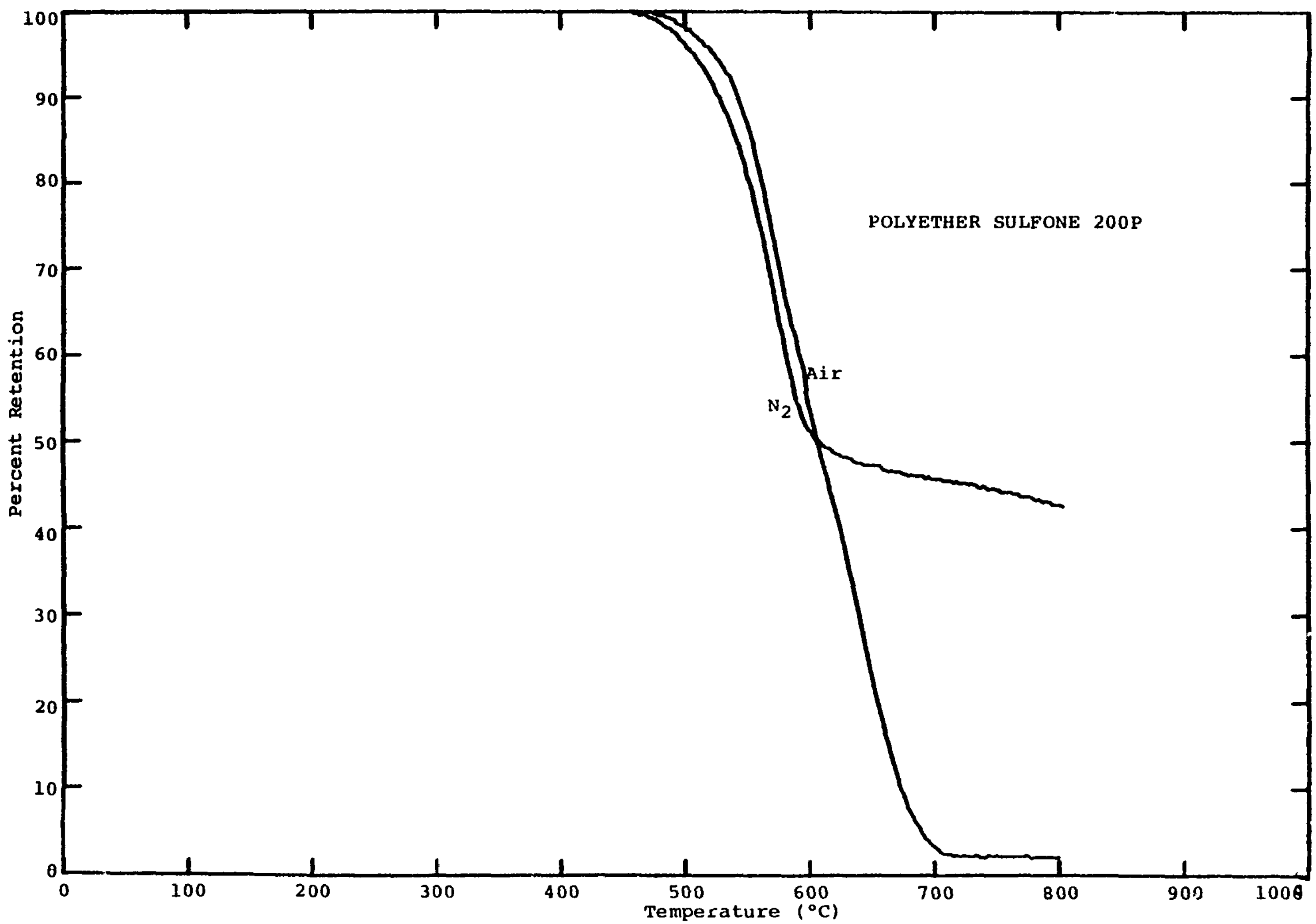


Figure 54. TGA Weight Loss Thermograms for Victrex 200P Polyethersulfone.

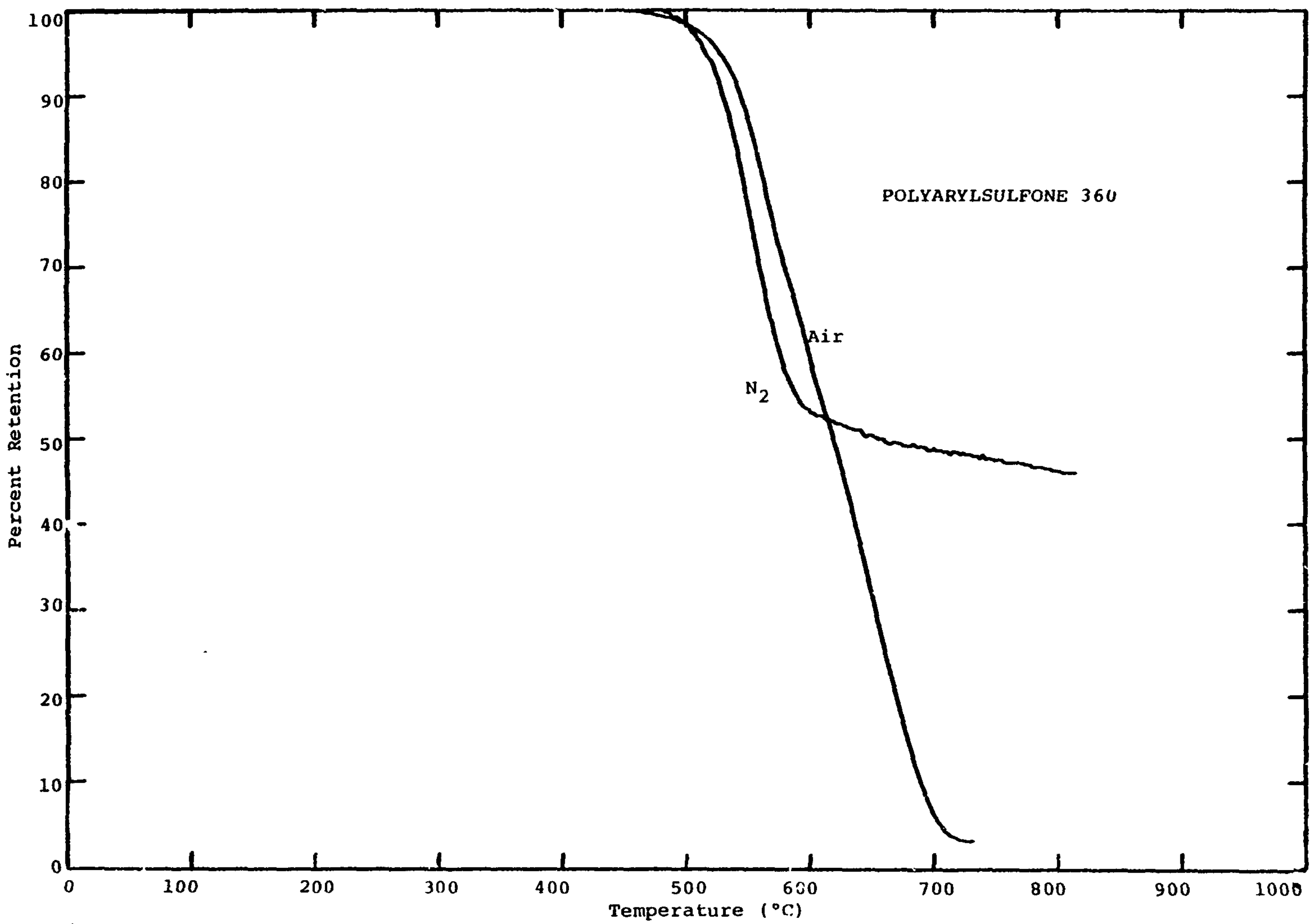


Figure 55. TGA Weight Loss Thermograms for Astrel 360 Polyarylsulfone.

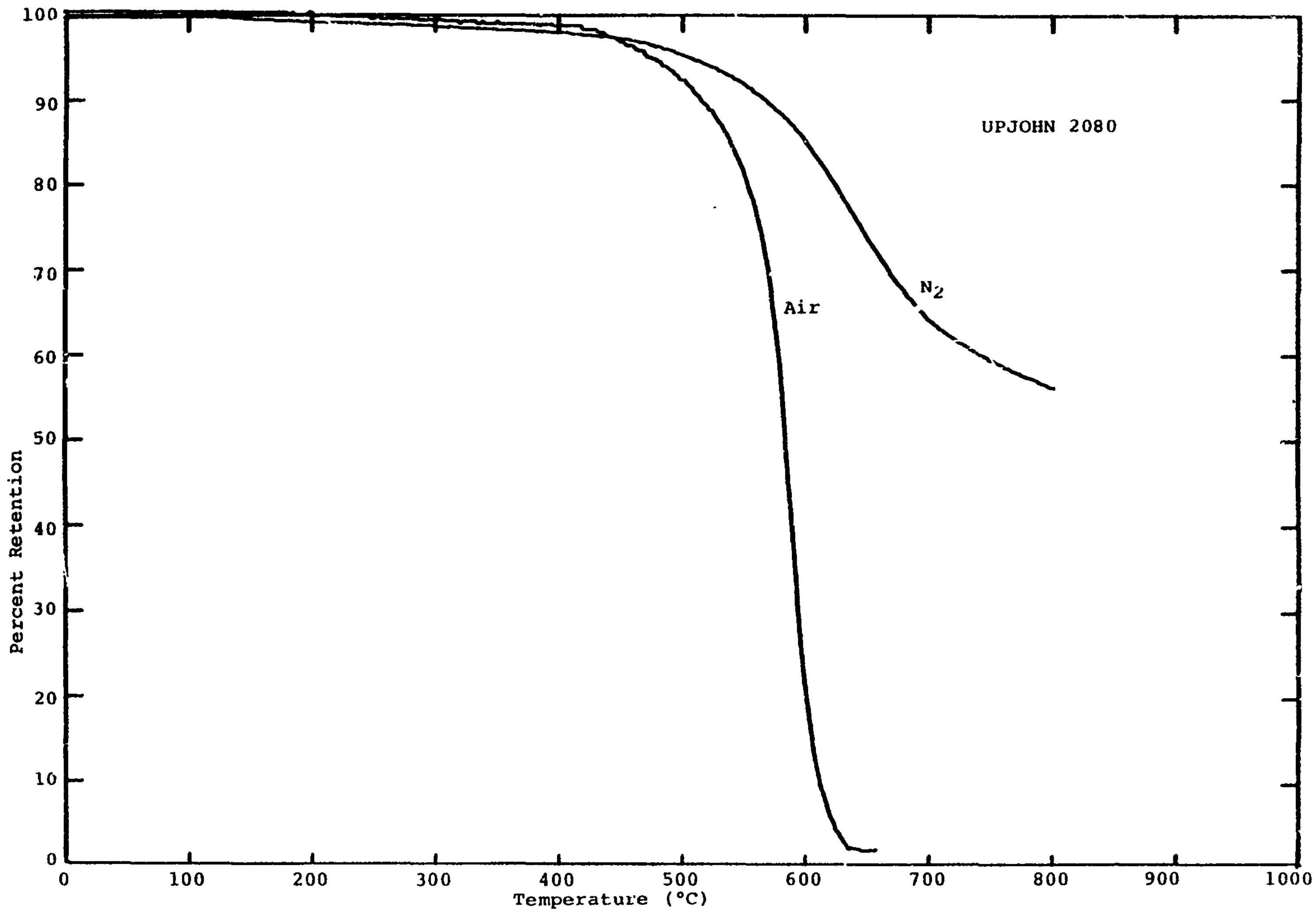


Figure 56. TGA Weight Loss Thermograms for Upjohn 2080 Methylenedianiline Polyimide.

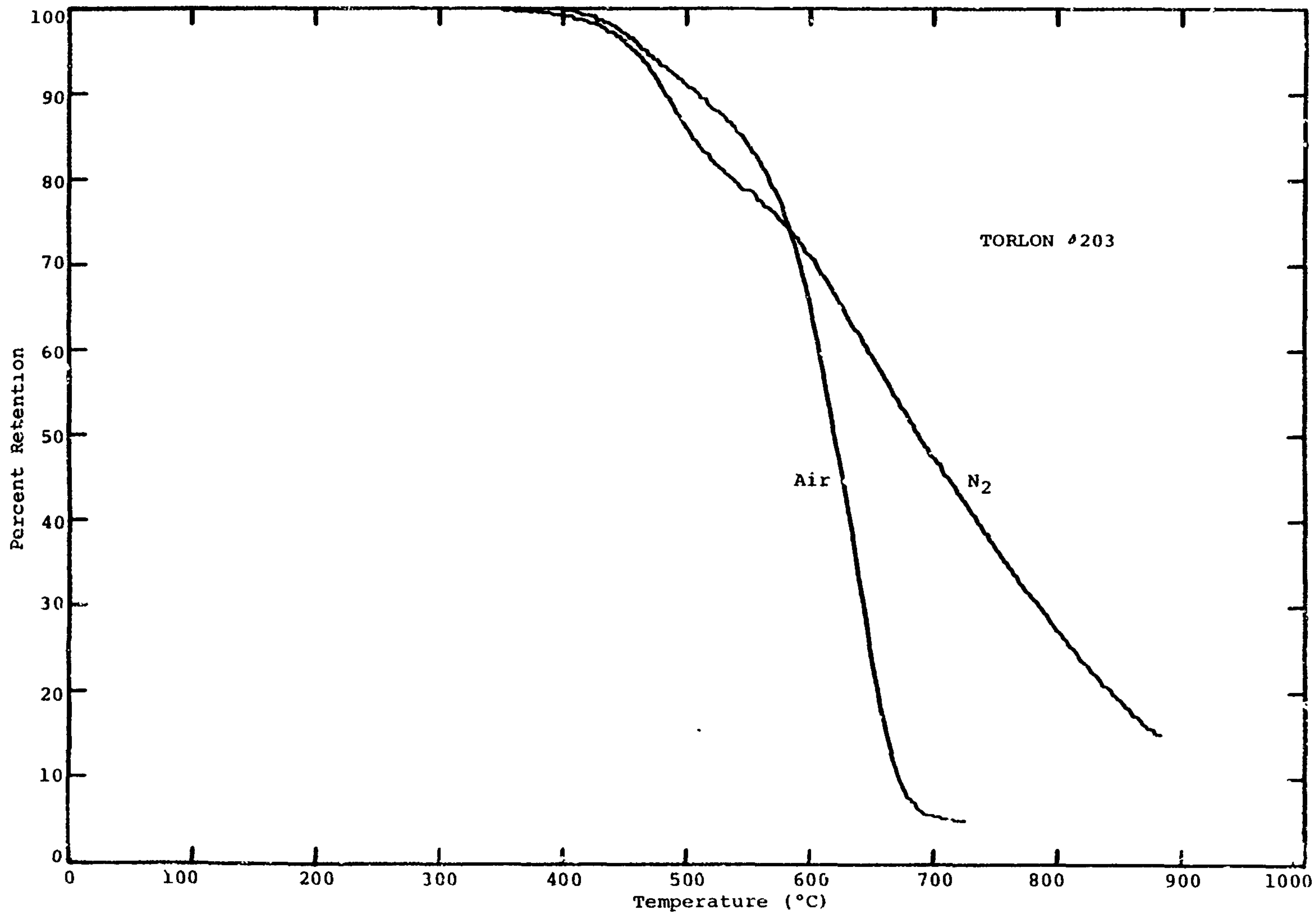


Figure 57. TGA Weight Loss Thermograms for Torlon 4203 Methylenedianiline Polyamide-imide.

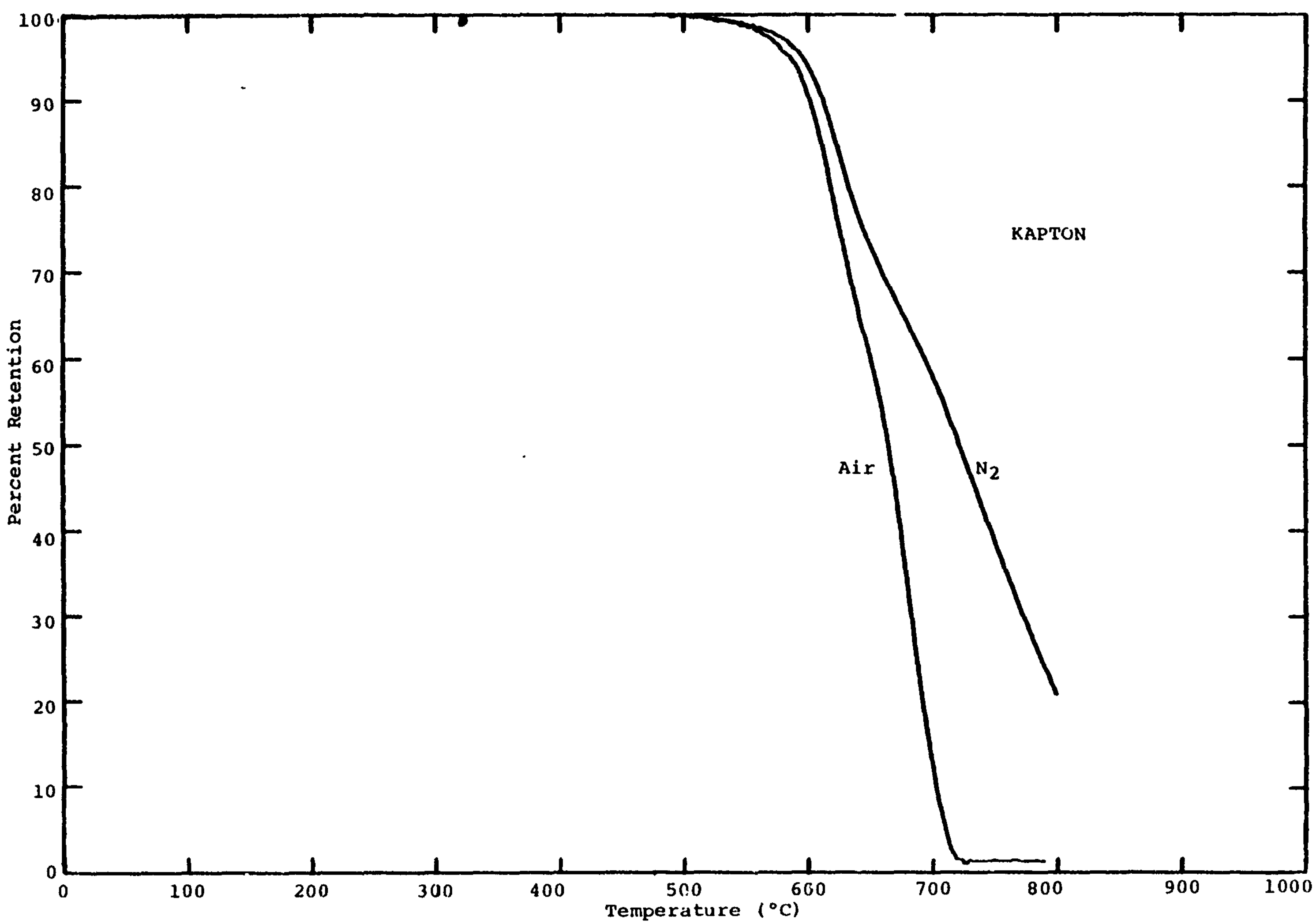


Figure 58. TGA Weight Loss Thermograms for DuPont Kapton Diaminodiphenylether Polyimide.

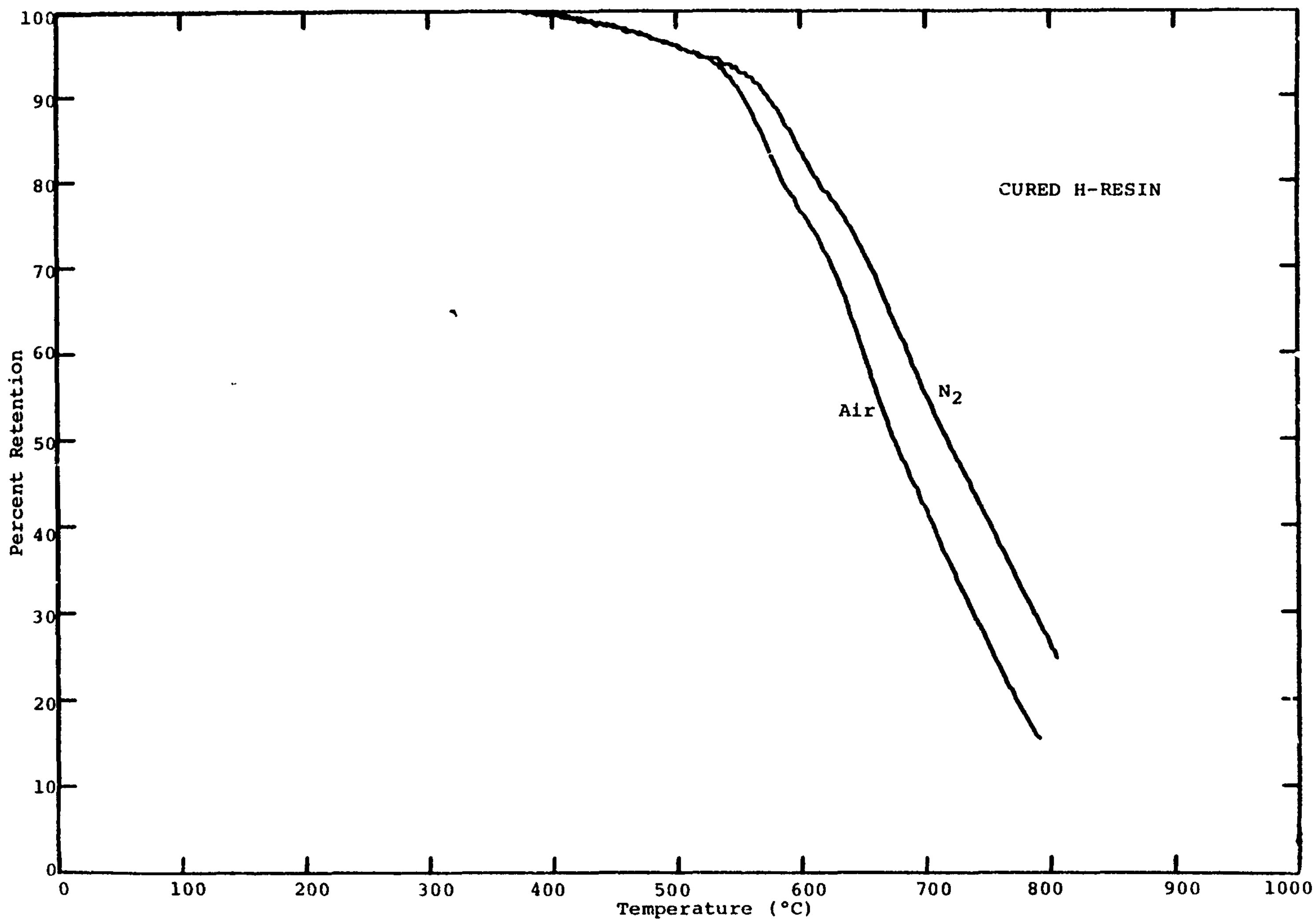


Figure 59. TGA Weight Loss Thermograms for H-Resin; Resin Sample Cured as Specified in Figure 60.

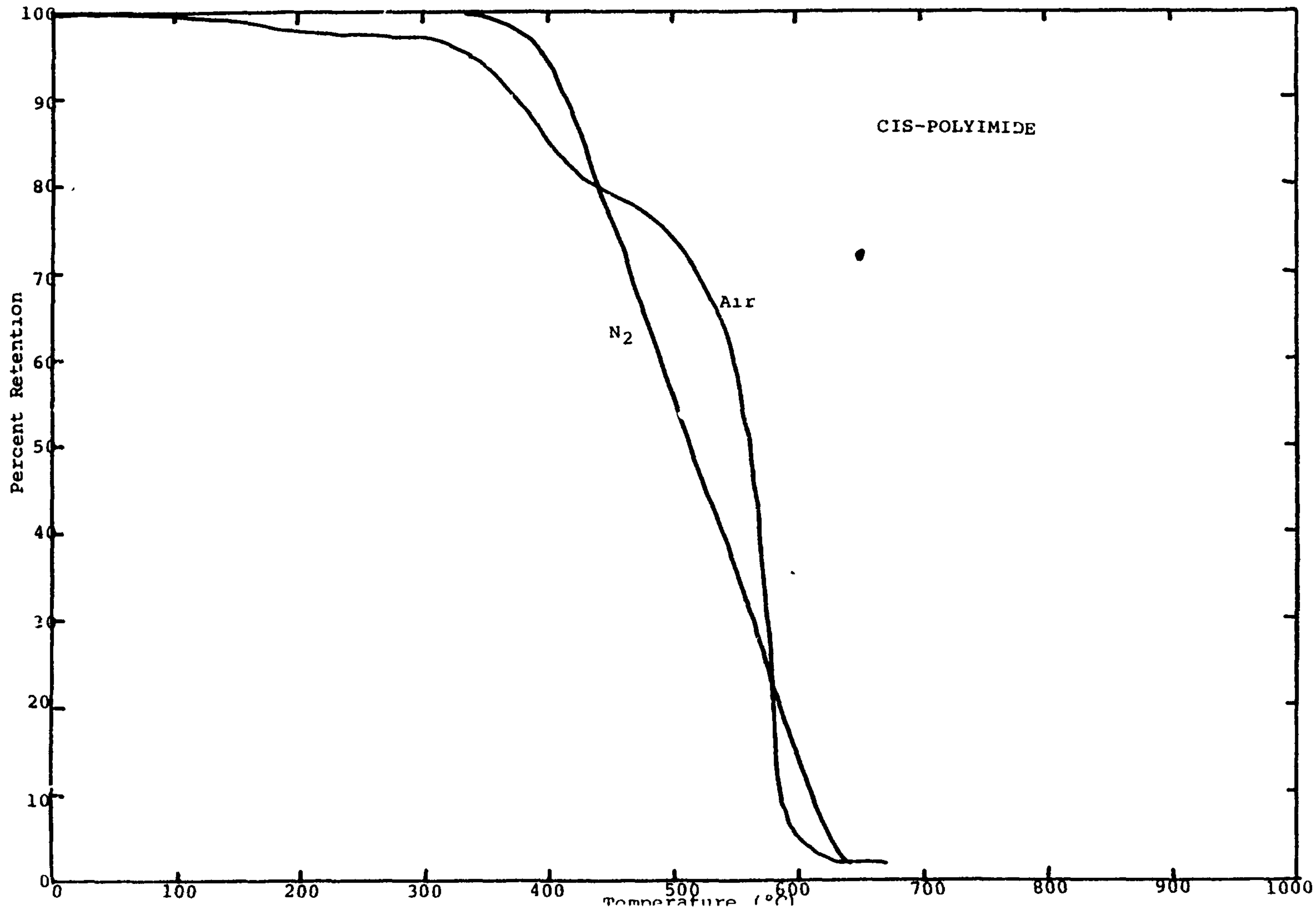


Figure 60. TGA Weight Loss Thermograms for Cis-Polyimide.

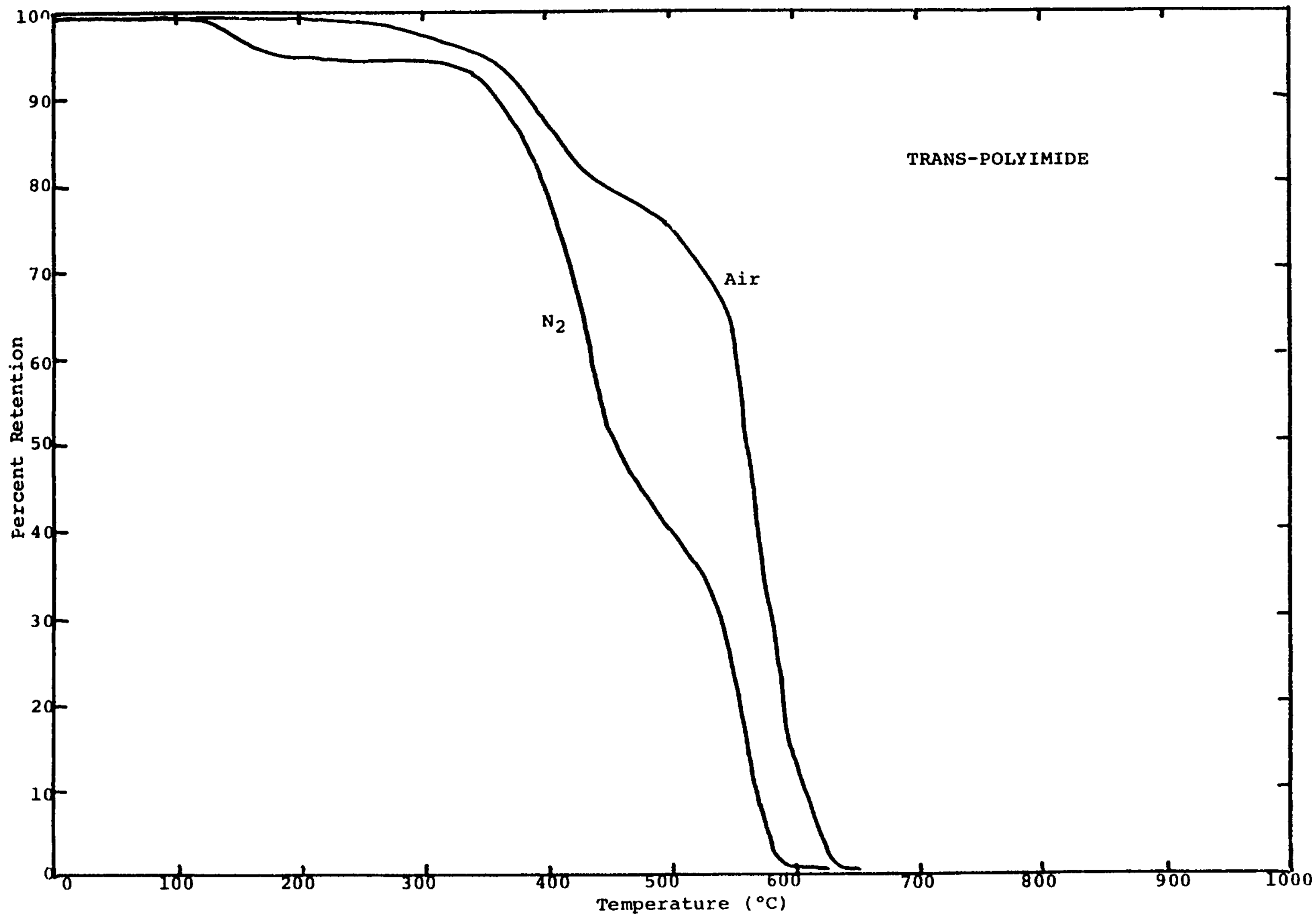


Figure 61. TGA Weight Loss Thermograms for Trans-Polyimide.

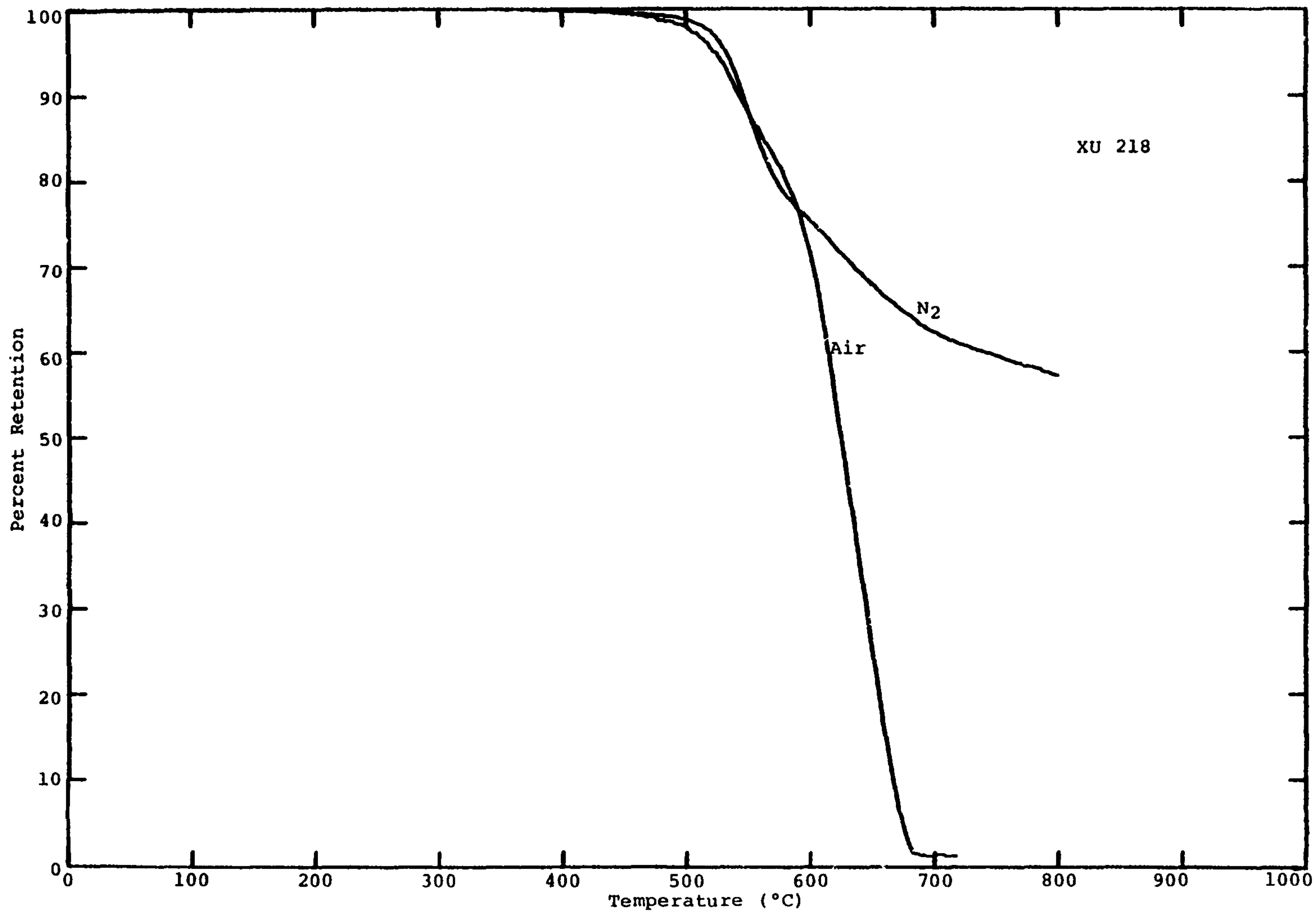


Figure 62. TGA Weight Loss Thermograms for XU-218.

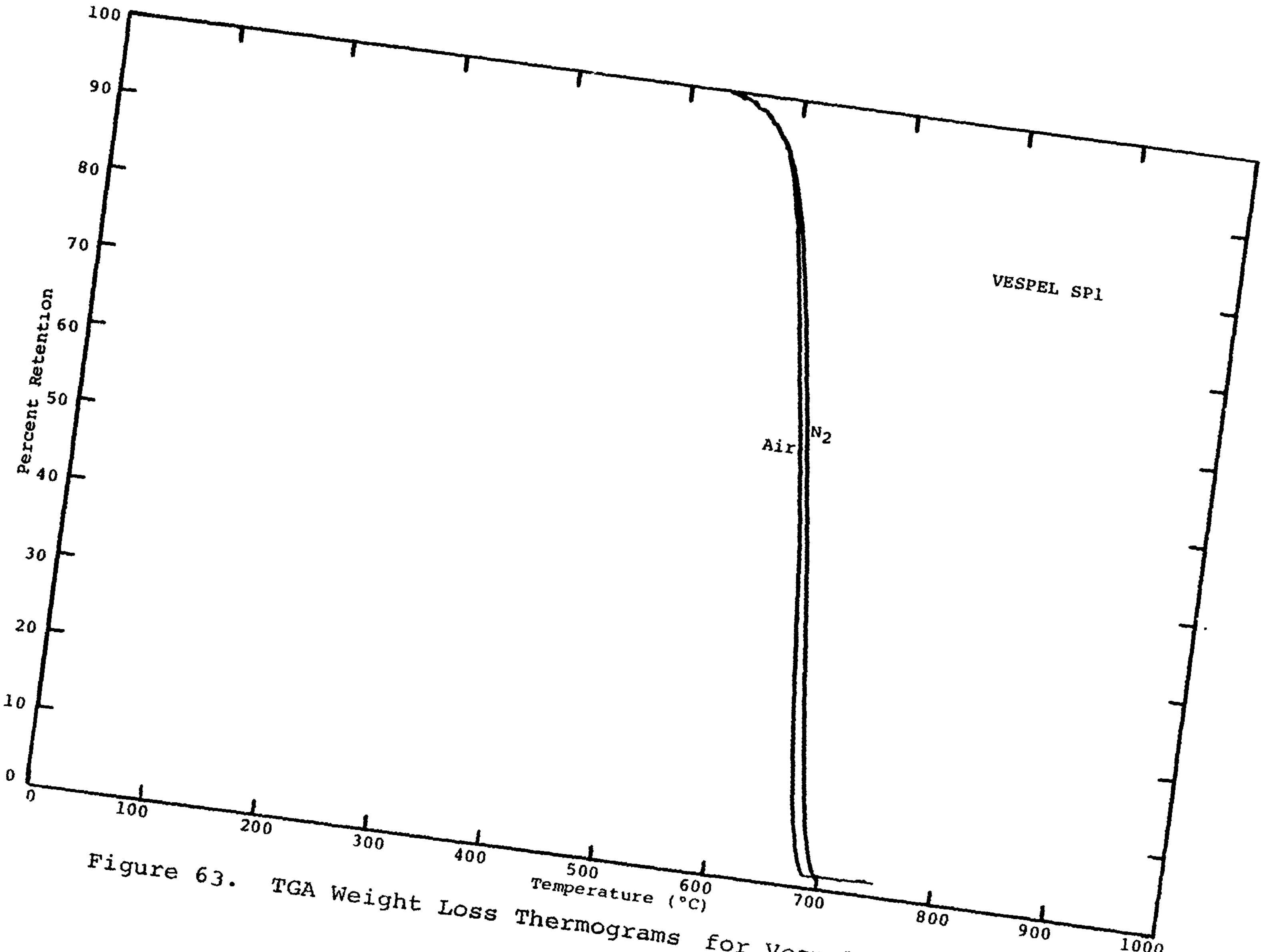


Figure 63. TGA Weight Loss Thermograms for Vespel SP1.

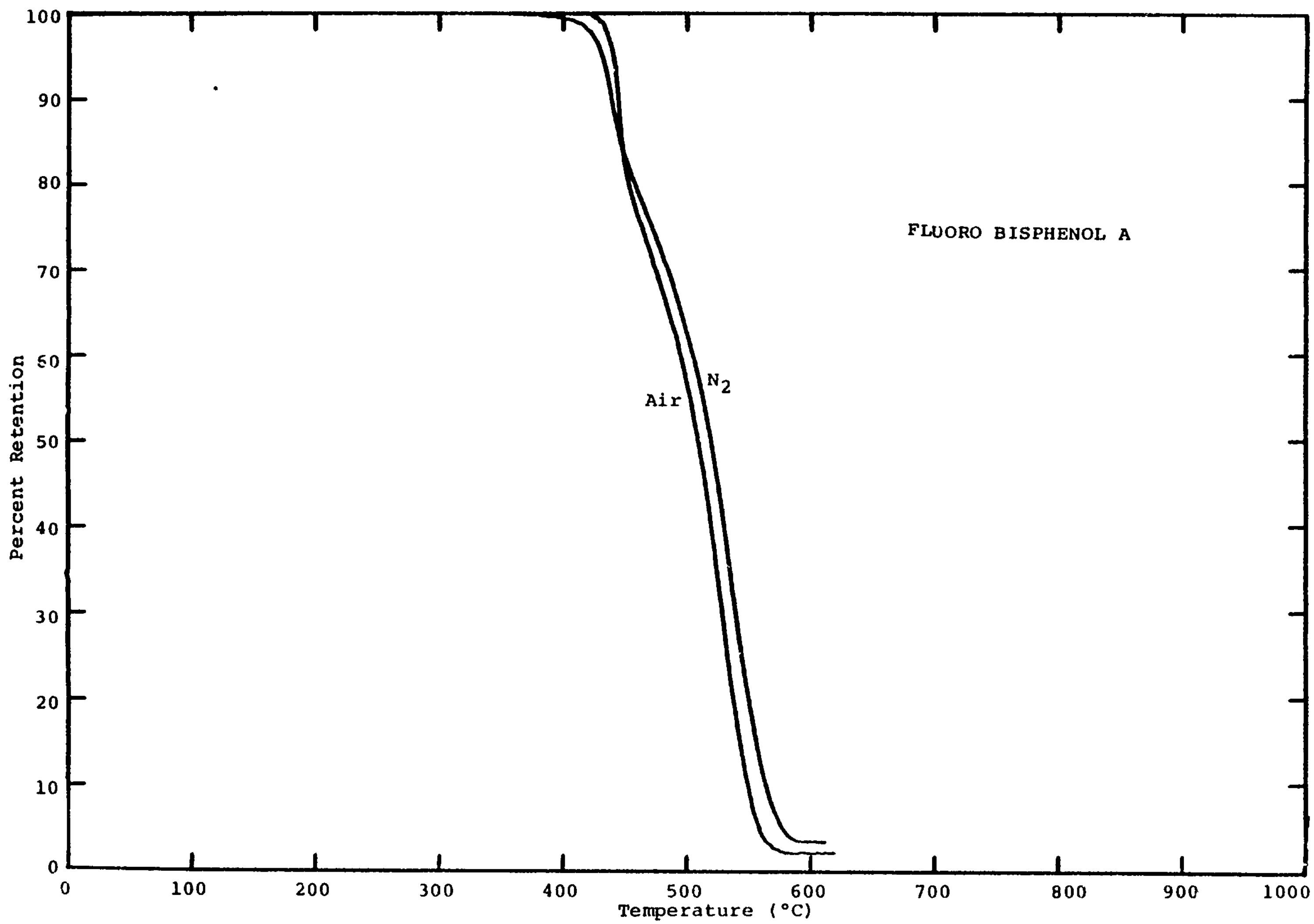


Figure 64. TGA Weight Loss Thermograms for Fluorinated Bisphenol A.

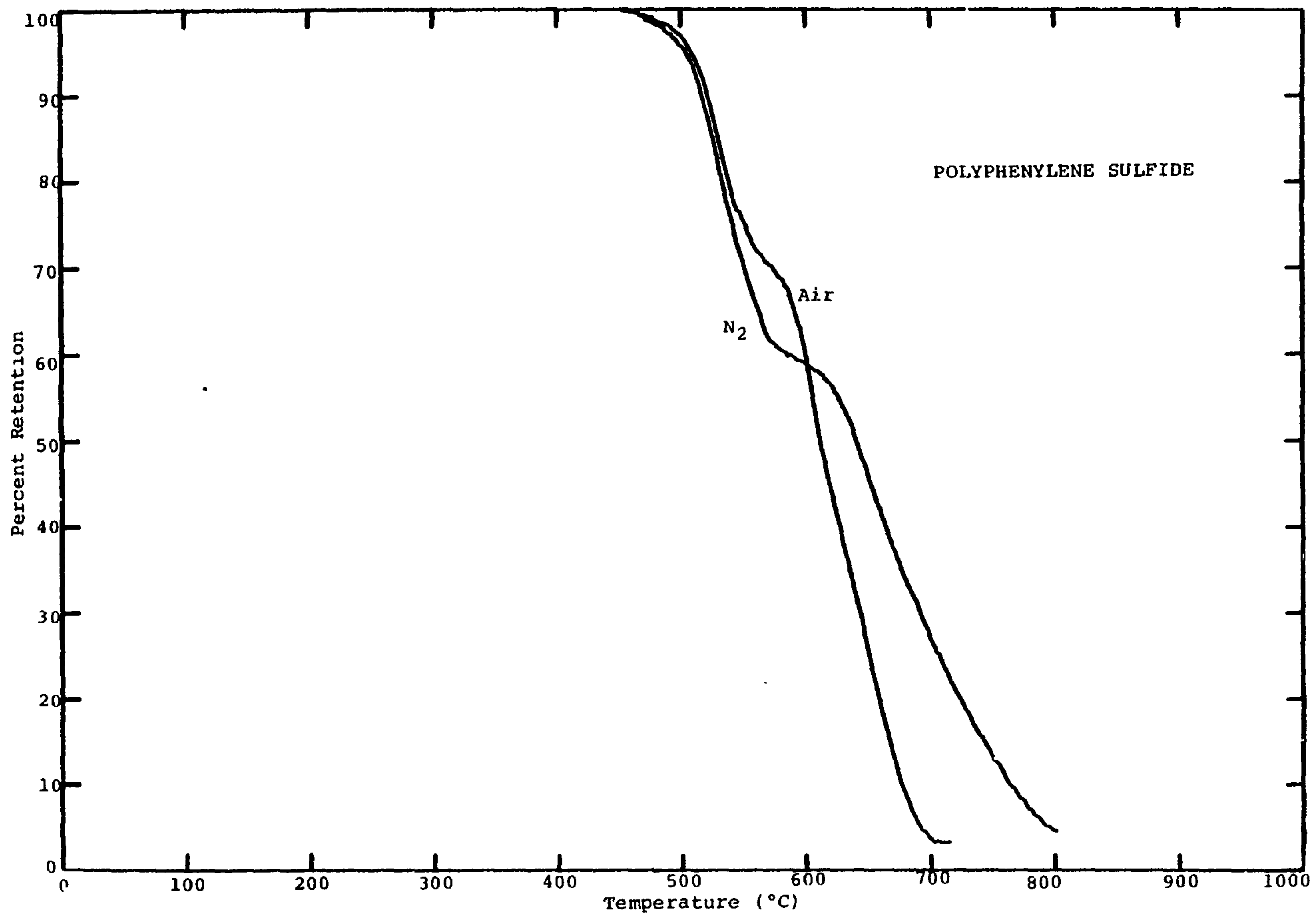


Figure 65. Phillips Ryton Polyphenylene Sulfide TGA Weight Loss Thermograms.

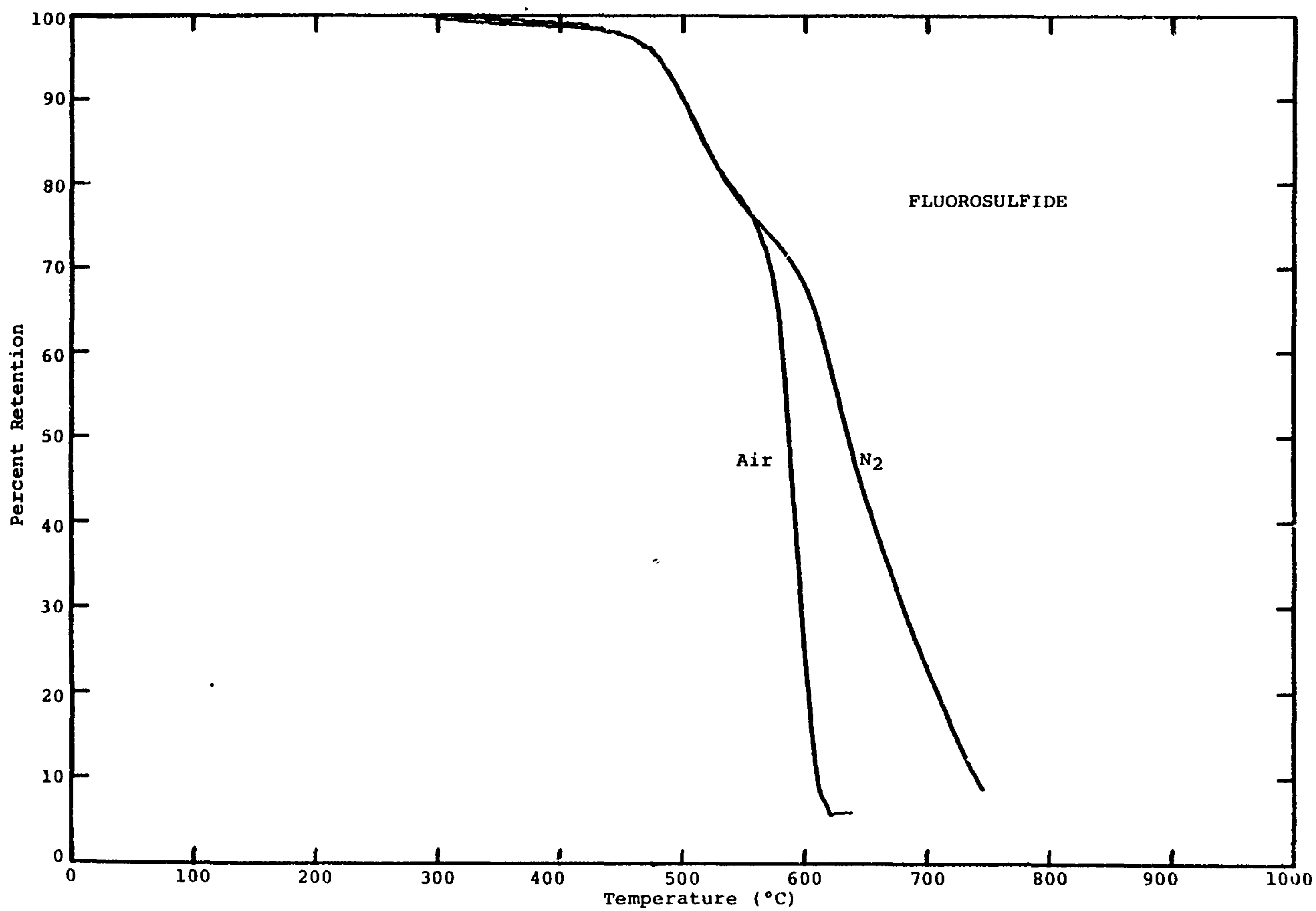


Figure 66. TGA Weight Loss Thermograms for Fluorosulfide.

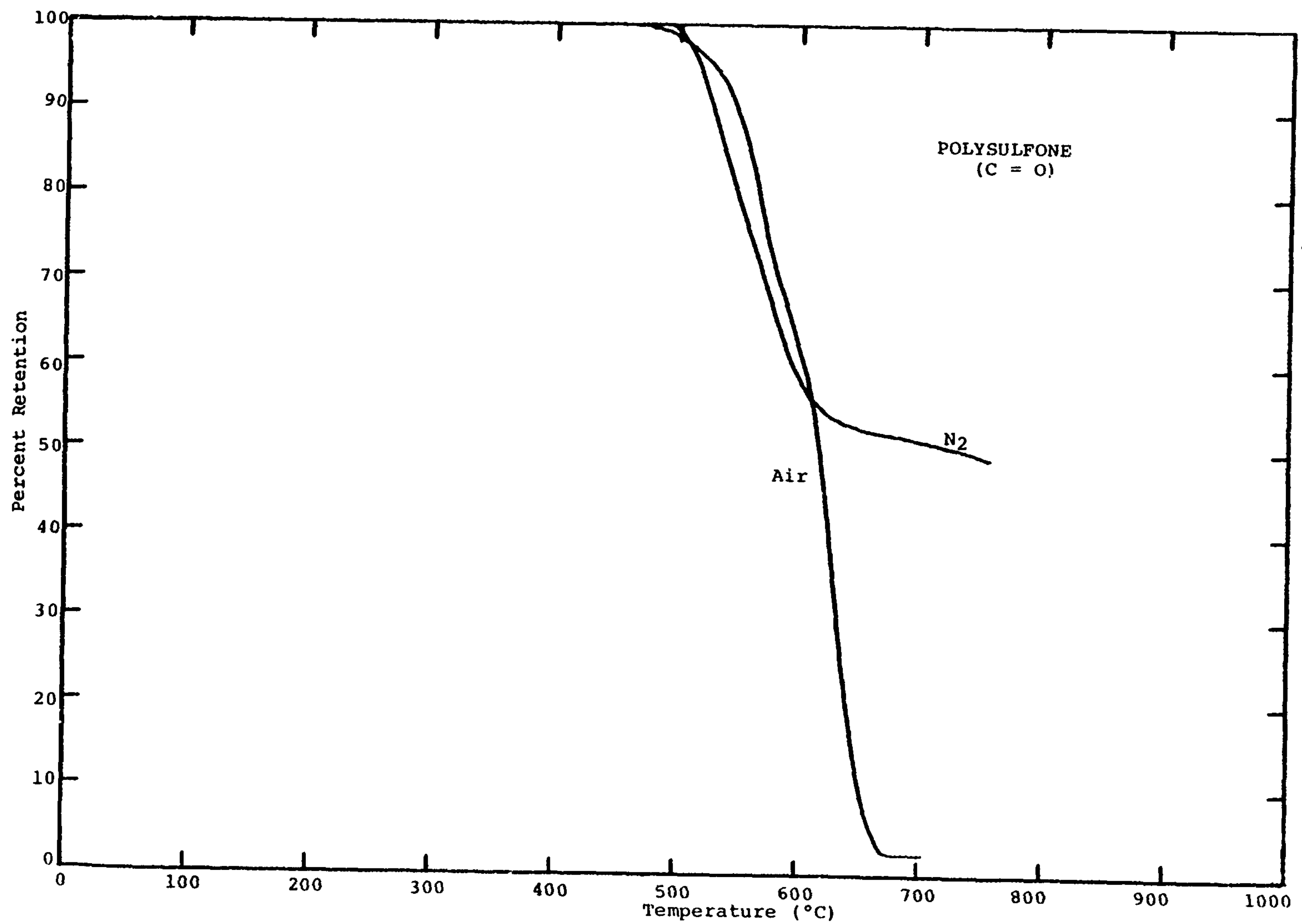


Figure 67. TGA Weight Loss Thermograms for Carbcnyl Polysulfone.

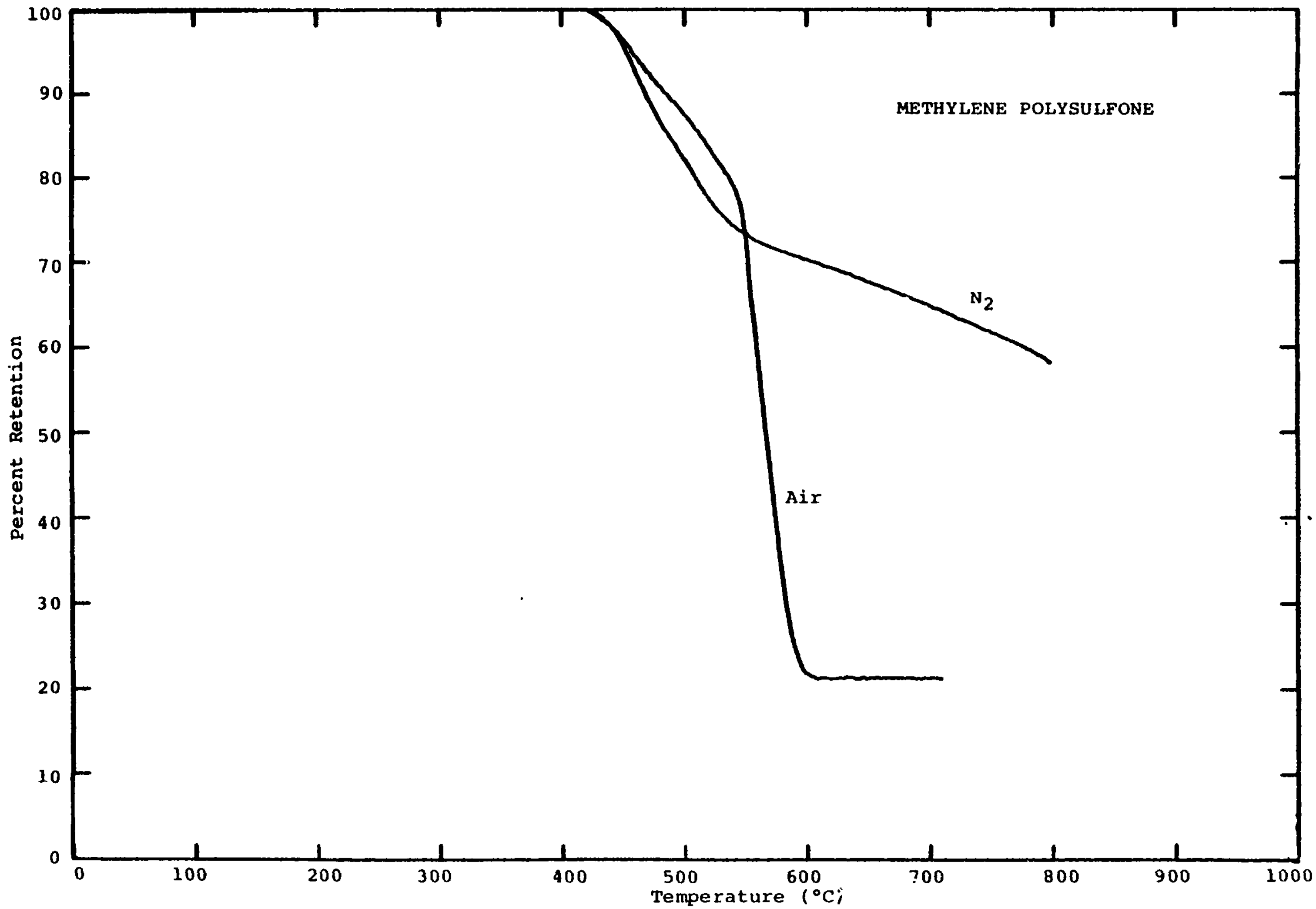


Figure 68. TGA Weight Loss Thermograms for Methylene Polysulfone.

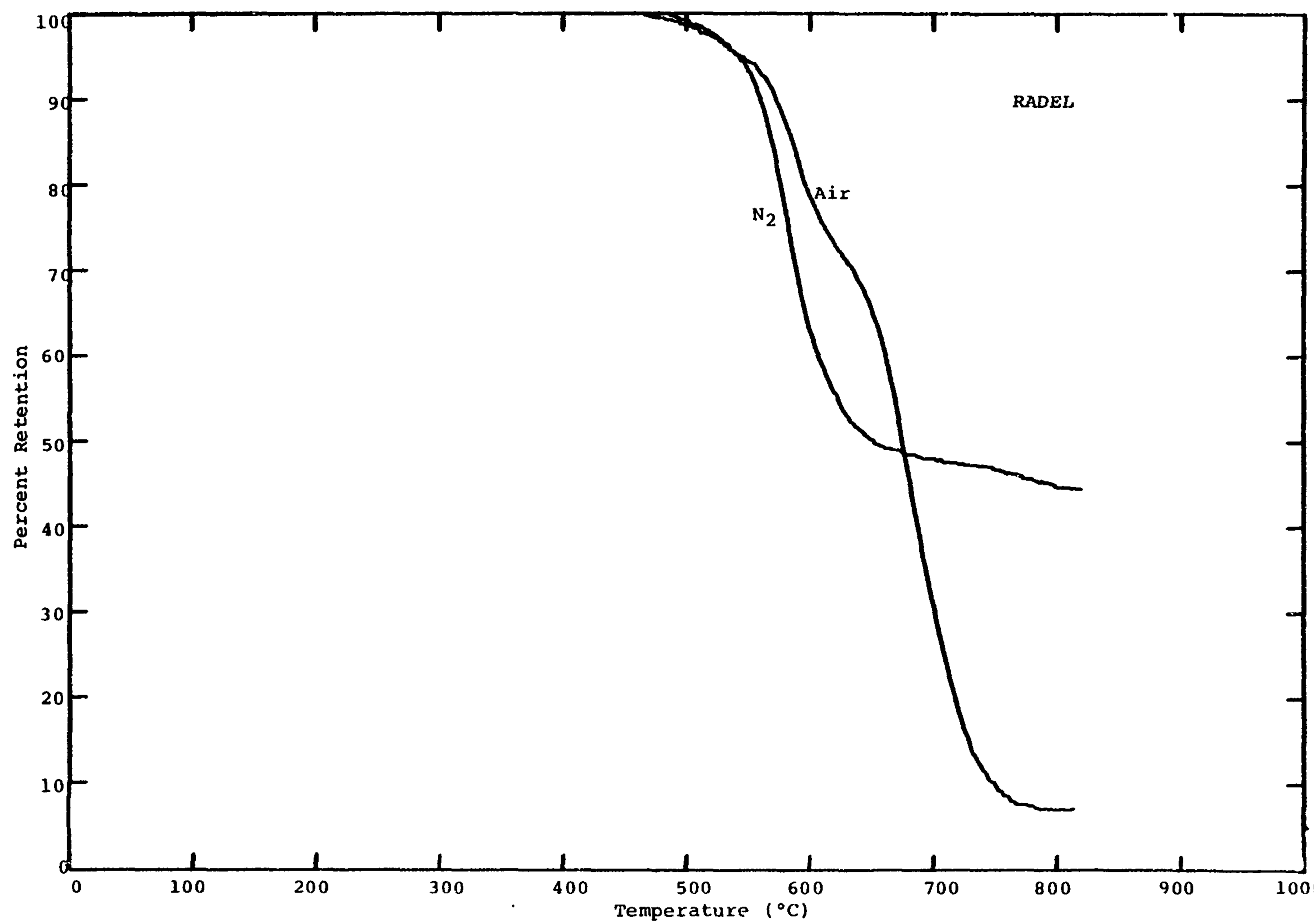


Figure 69. TGA Weight Loss Thermograms for Radel Polyarylethersulfone.

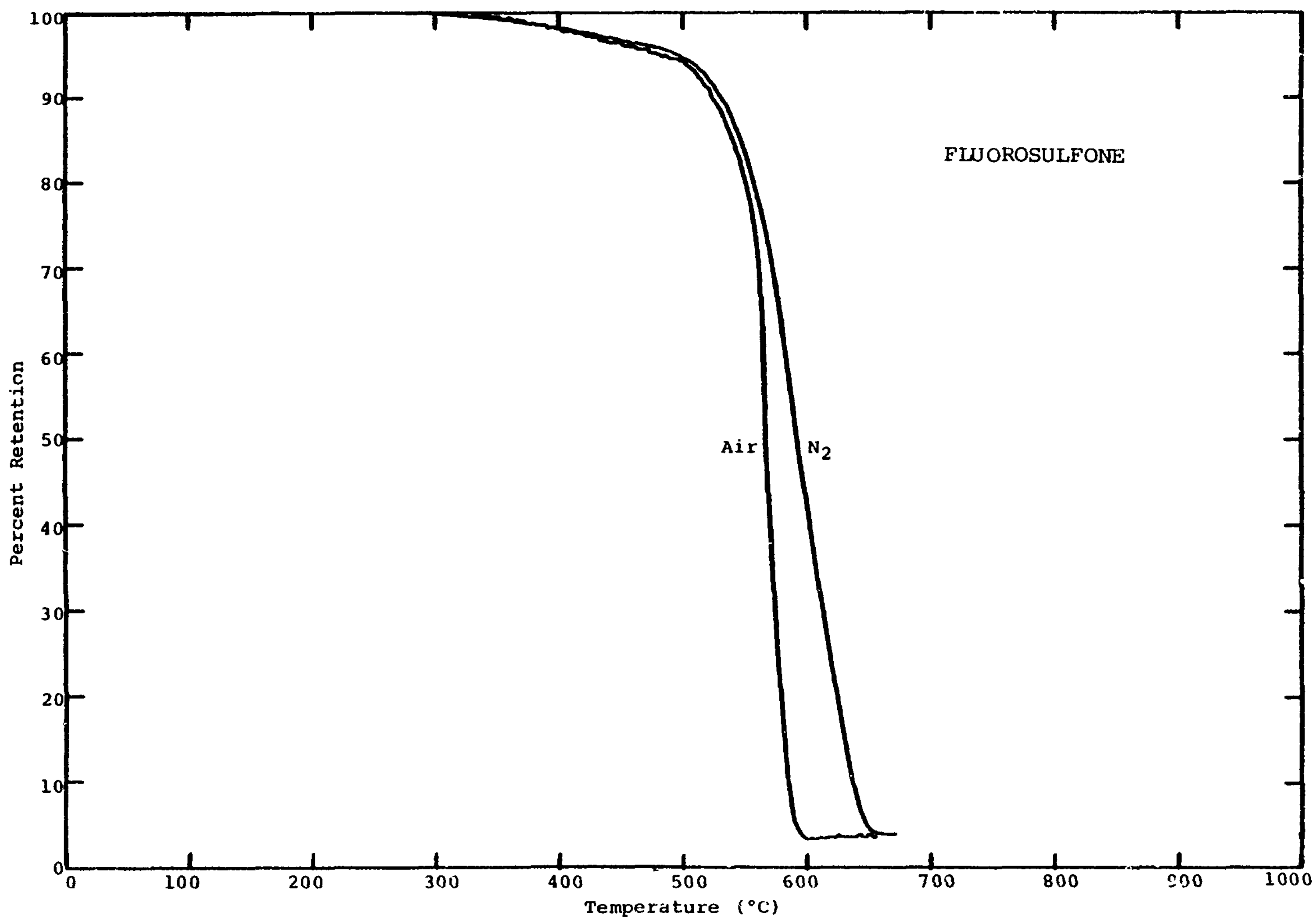


Figure 70. TGA Weight Loss Thermograms for Fluorosulfone Polymer.

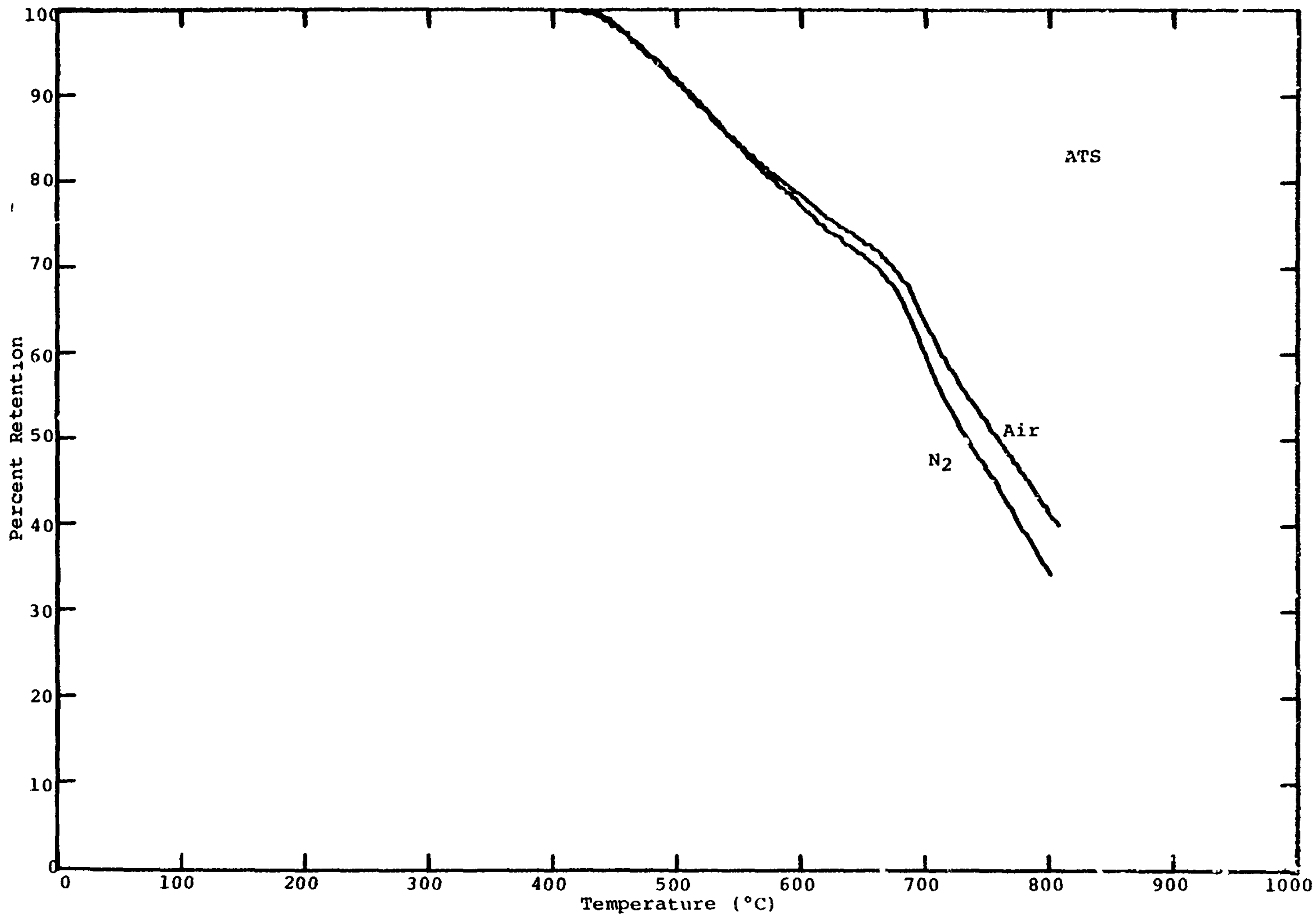


Figure 71. TGA Weight Loss Thermograms for ATS.

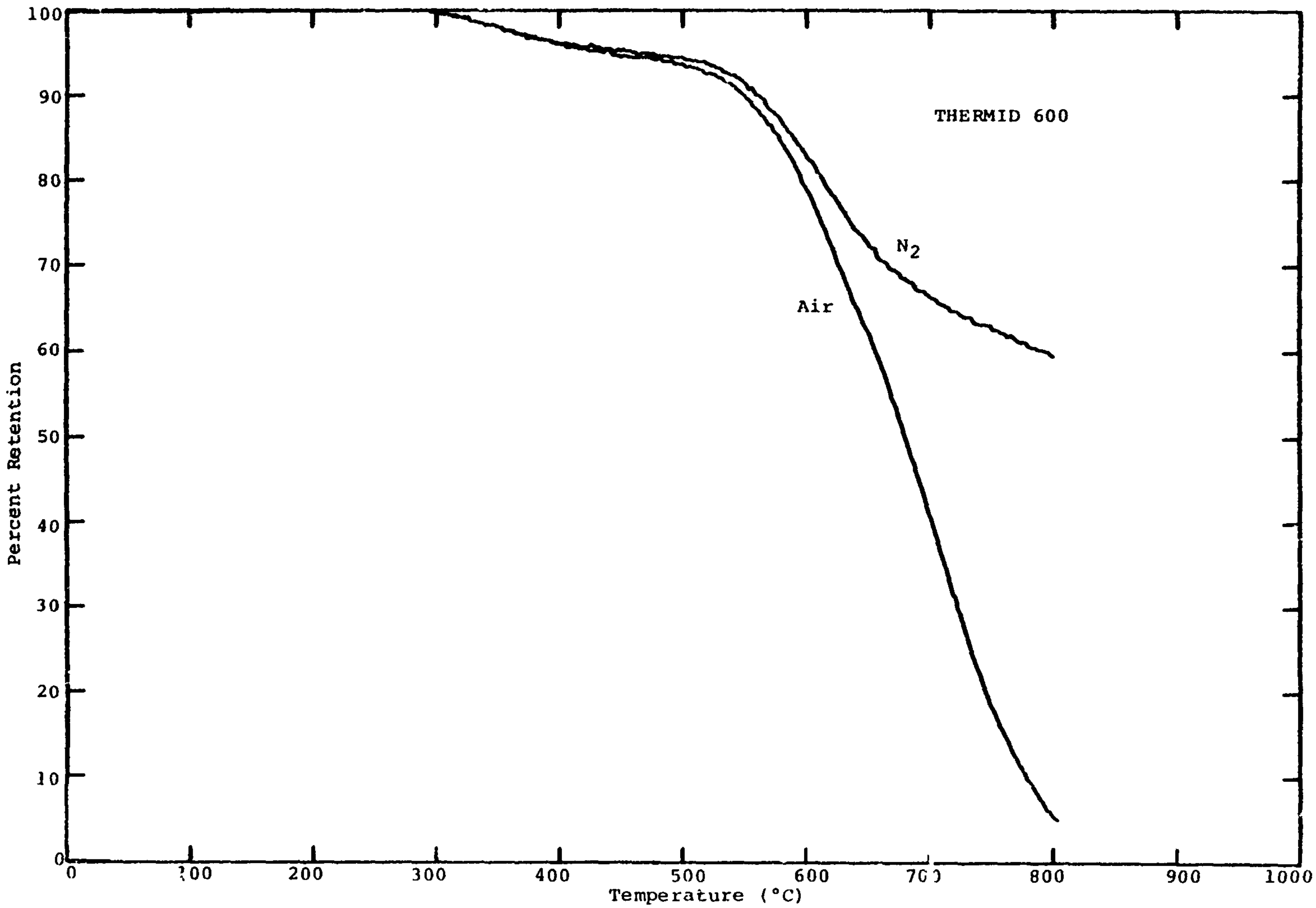


Figure 72. TGA Weight Loss Thermograms for Thermid 600.

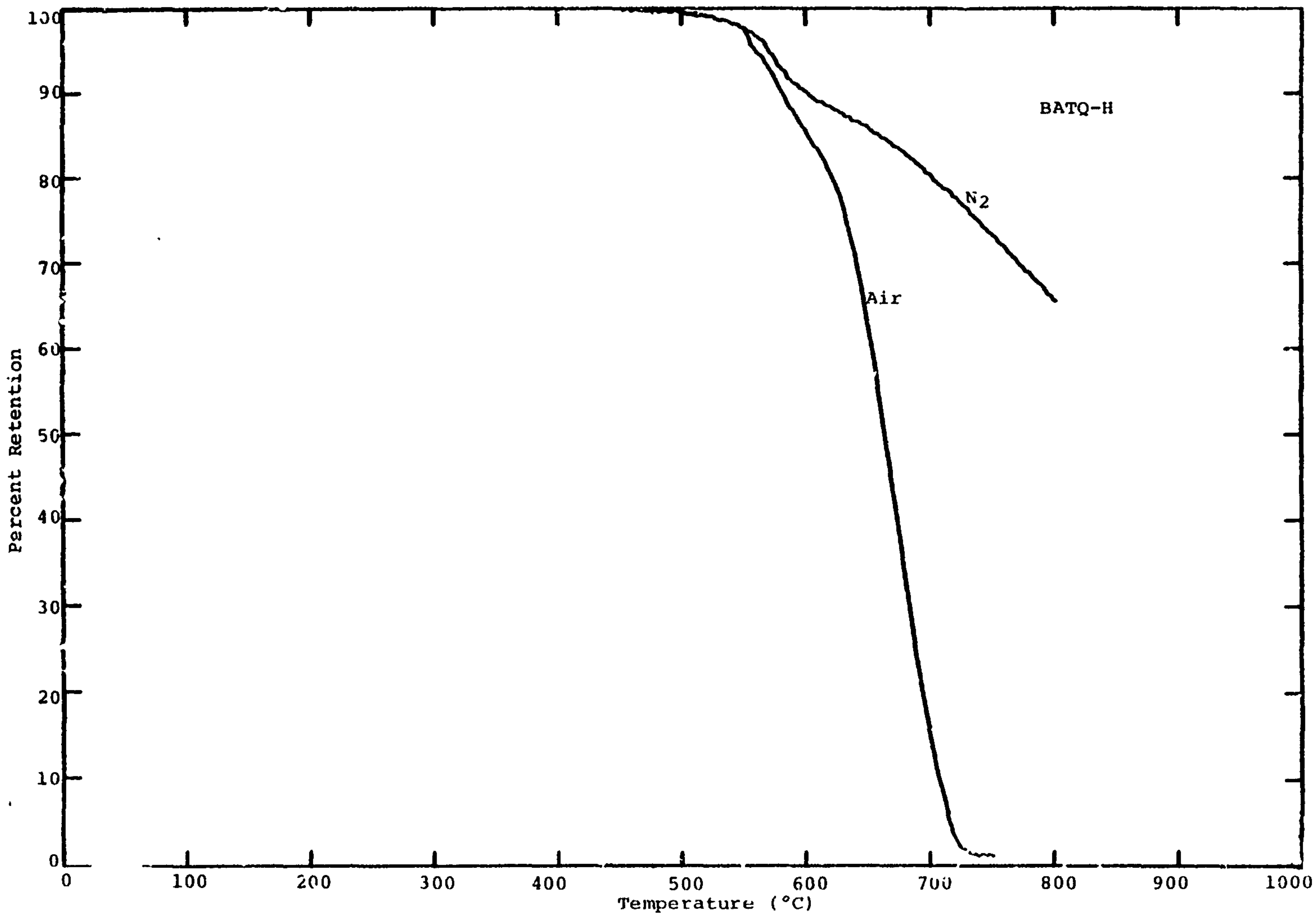


Figure 73. TGA Weight Loss Thermograms for BATQ-H; Sample Cured 2 Hrs. at 200°C Followed by 1 Hr. at 300°C.

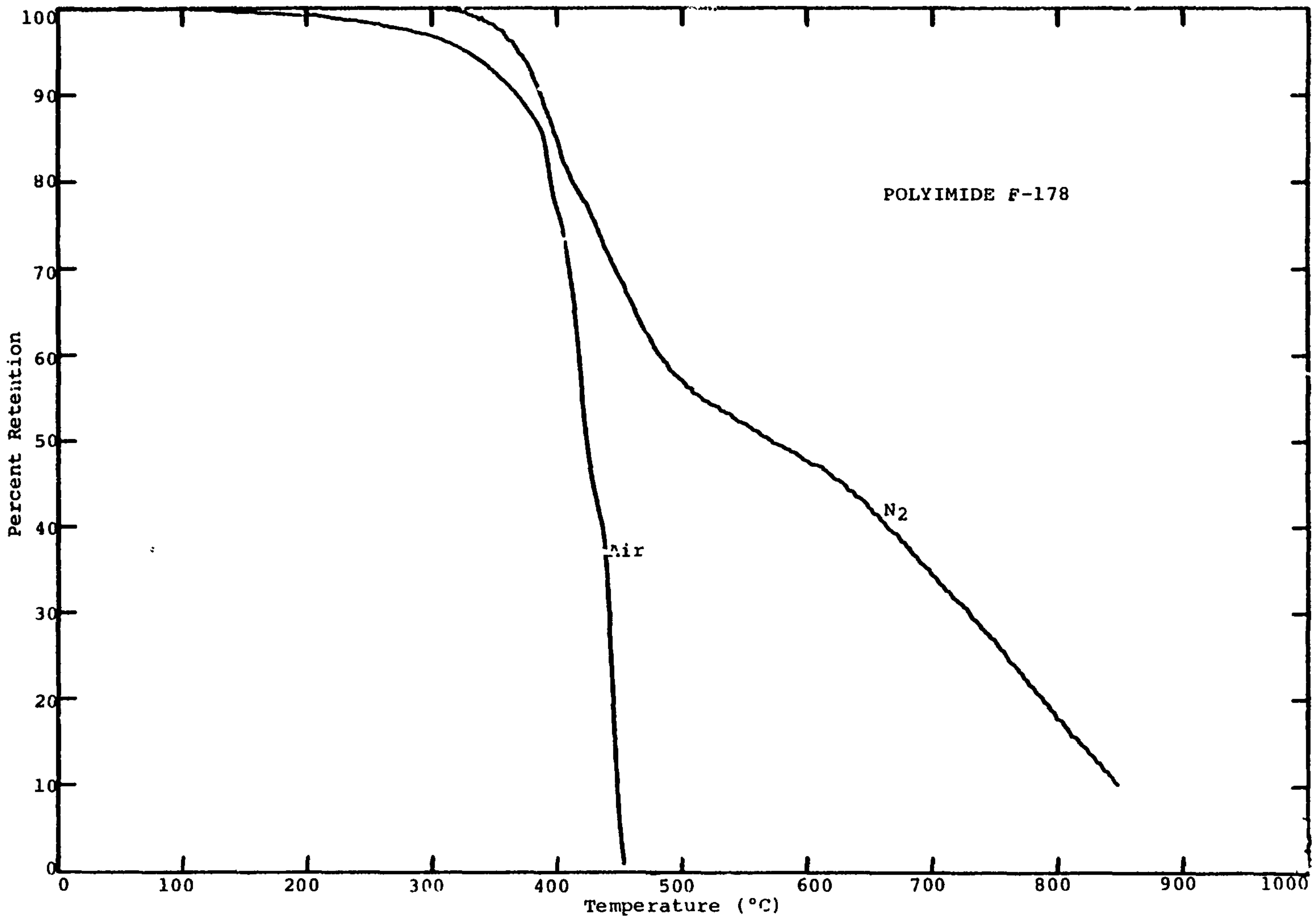


Figure 74. TGA Weight Loss Thermograms for F-178 Polyimide; Sample Cured 1 Hr. at 177°C Followed by 2 Hrs. at 246°C.

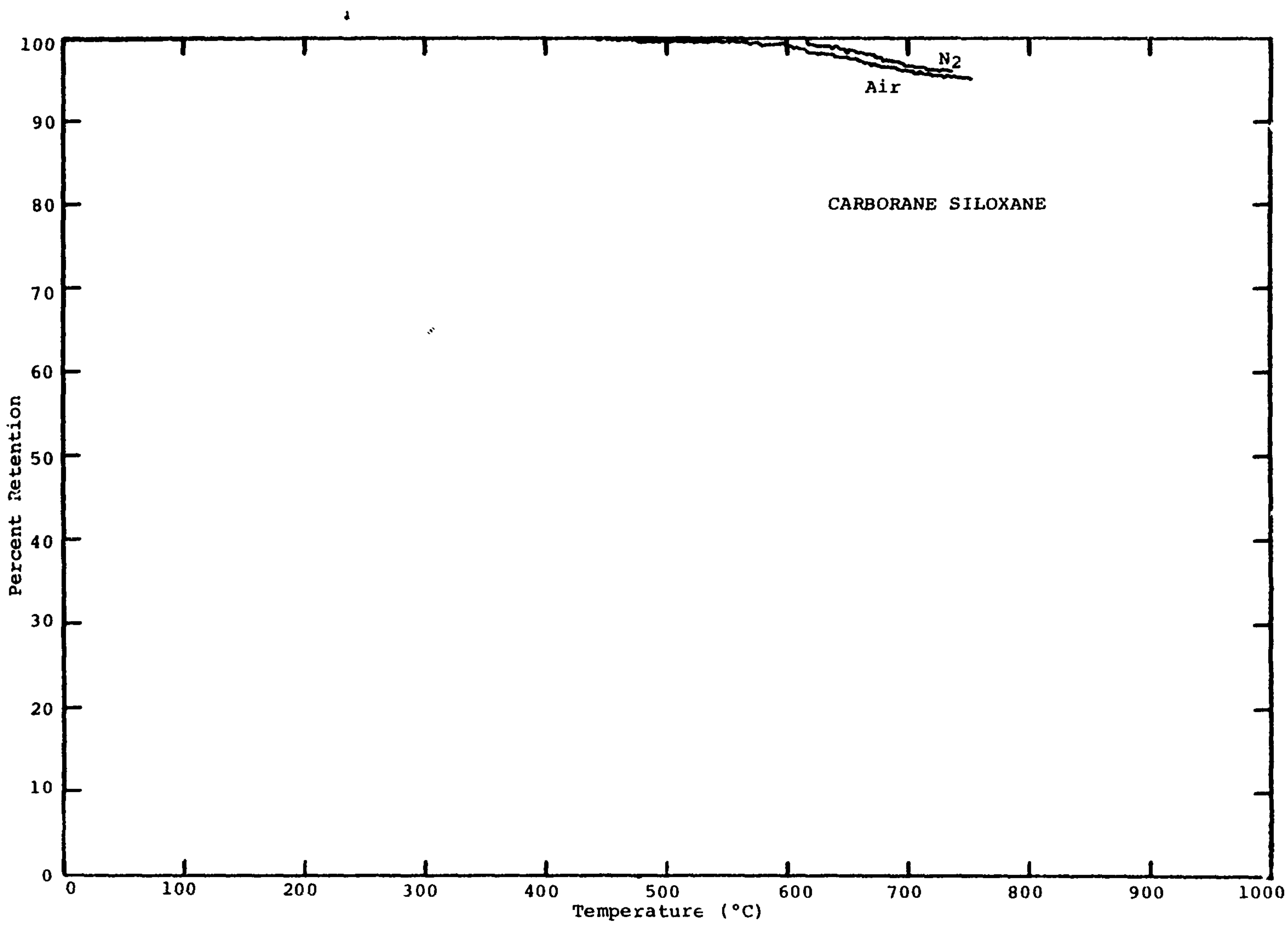


Figure 75. TGA Weight Loss Thermograms for m-Carborane Siloxane Vulcanized Elastomer.

TABLE 9

RELATION BETWEEN T_g AND DECOMPOSITION TEMPERATURE*

POLYIMIDES

Polymer Name	T_g	T_d	ΔT
Kapton	406	595	189
2080	340	530	190
Torlon	280	500	220
Experimental Polyimide (cis)	334	400	66
(trans)	360	400	60
XU 218	346	540	194

* Temperatures in °C.

TABLE 10

RELATION BETWEEN T_g AND DECOMPOSITION TEMPERATURE*

POLYSULFONES

Polymer Name	T_g	T_d	ΔT
P-1700 (P-1800)	191	610	419
Radel	234	570	336
Victrex	242	535	293
Astrel 360	310	540	230
Fluorosulfone	240	520	280
Bisphenol A Fluoro Aromatic	148	440	292
Ryton-Polyphenylene Sulfide	88	520	432
Fluorosulfide	128	500	372
Carbonyl Sulfone	190	530	340
Methylene Sulfone	180	480	300

* Temperatures in °C.

that changes in damping do not occur at temperatures below T_g and T_d, long-term thermal aging studies and property evaluations on aged samples were recommended as indicated in Section III.

It should be noted that while thermal exposure in air is a measurement of the worst aging condition that the damping material may be exposed to, the inert N_2 atmosphere is probably more representative of thermal exposure of a constrained layer damping material. In the constrained layer case the material is not exposed to air directly but is shielded by the confining metal surfaces.

SECTION III

THERMAL AGING OF SELECTED POLYMERS IN AIR

It was noted in Paragraph 3, Section II, that both polyimides and polysulfones possess TGA ΔT values [where $\Delta T = (T_d - T_g)$] that are on the order of 200°C or greater. While it is likely that this may be indicative of excellent thermal stability, it is true that structural and property changes can occur without appreciable weight loss. For this reason we conducted long-term aging studies in air on representative materials from each group. The results of the aging studies were expected to indicate worst case trends in property changes, since in actual use the materials generally will be applied in a constrained layer configuration with minimal exposure to air.

For the tests DMA size samples (0.75 in. x 0.5 in. x 0.04 in.) were aged at 250°C and 300°C. DMA properties were measured after aging at 250°C for 100 hrs. and 500 hrs. and at 300°C for 100 hrs. Weight loss data were recorded continuously for aging up to the maximum times at each temperature. Three polysulfone and three polyimide materials were selected for evaluation. These were: P-1800, 200P and Astrel 360 polysulfones and Torlon 4000, Upjohn 2080, and XU-218 polyimides.

The data for each polymer are displayed in Figures 76 through 93 as separate DMA storage and loss moduli and loss tangent plots for various aged samples compared to the original polymer. The DMA plots are followed by weight loss plots that include tabulated data as well. In general total weight losses are relatively small. There are significant property changes, however, particularly for polyimides. Evidence of chain scission and branching accompanied by a lowering of T_g is found in some cases, while in other cases crosslinking is apparent with an increase in T_g and a corresponding leveling of the

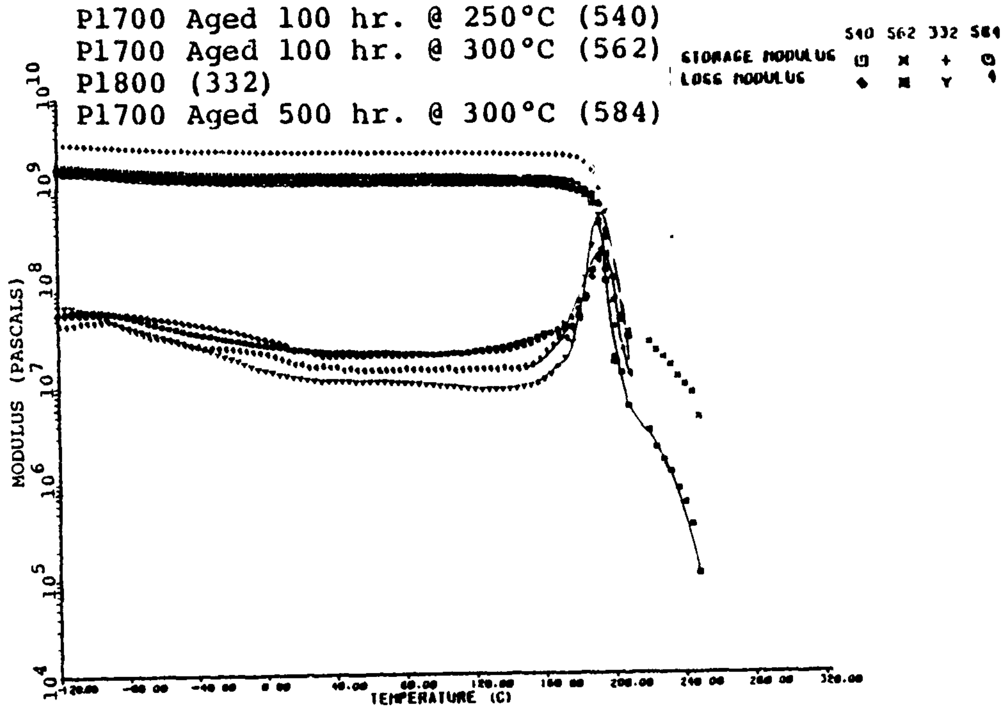


Figure 76. Aged P-1700 Polysulfone DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

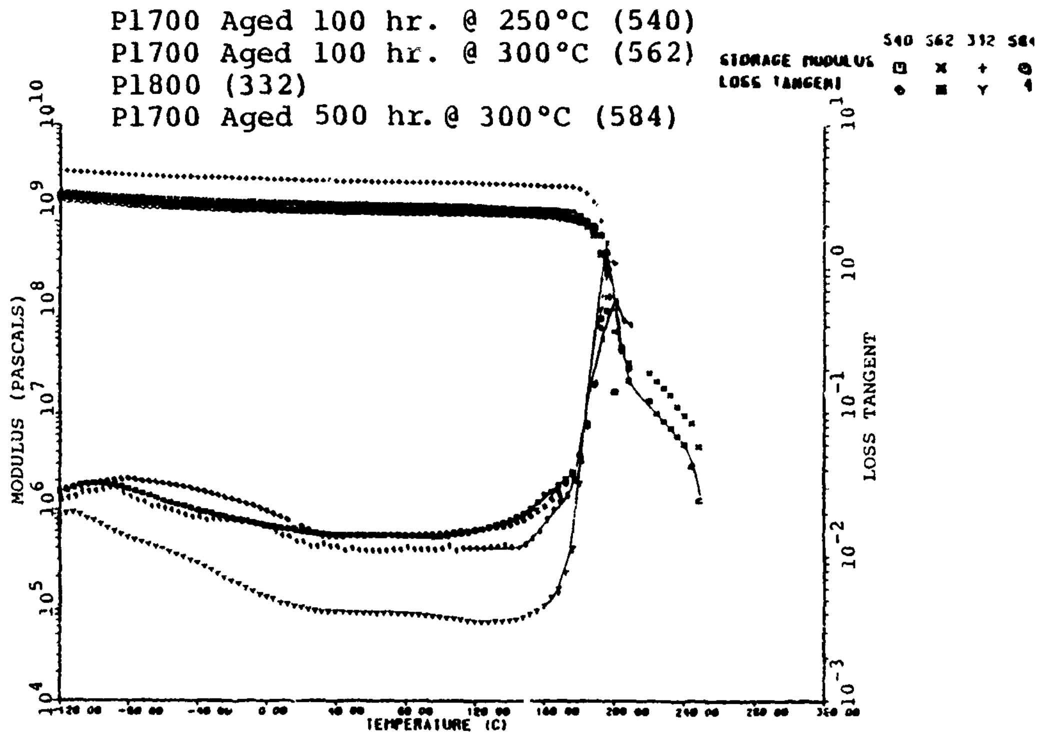


Figure 77. Aged P-1700 Polysulfone DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

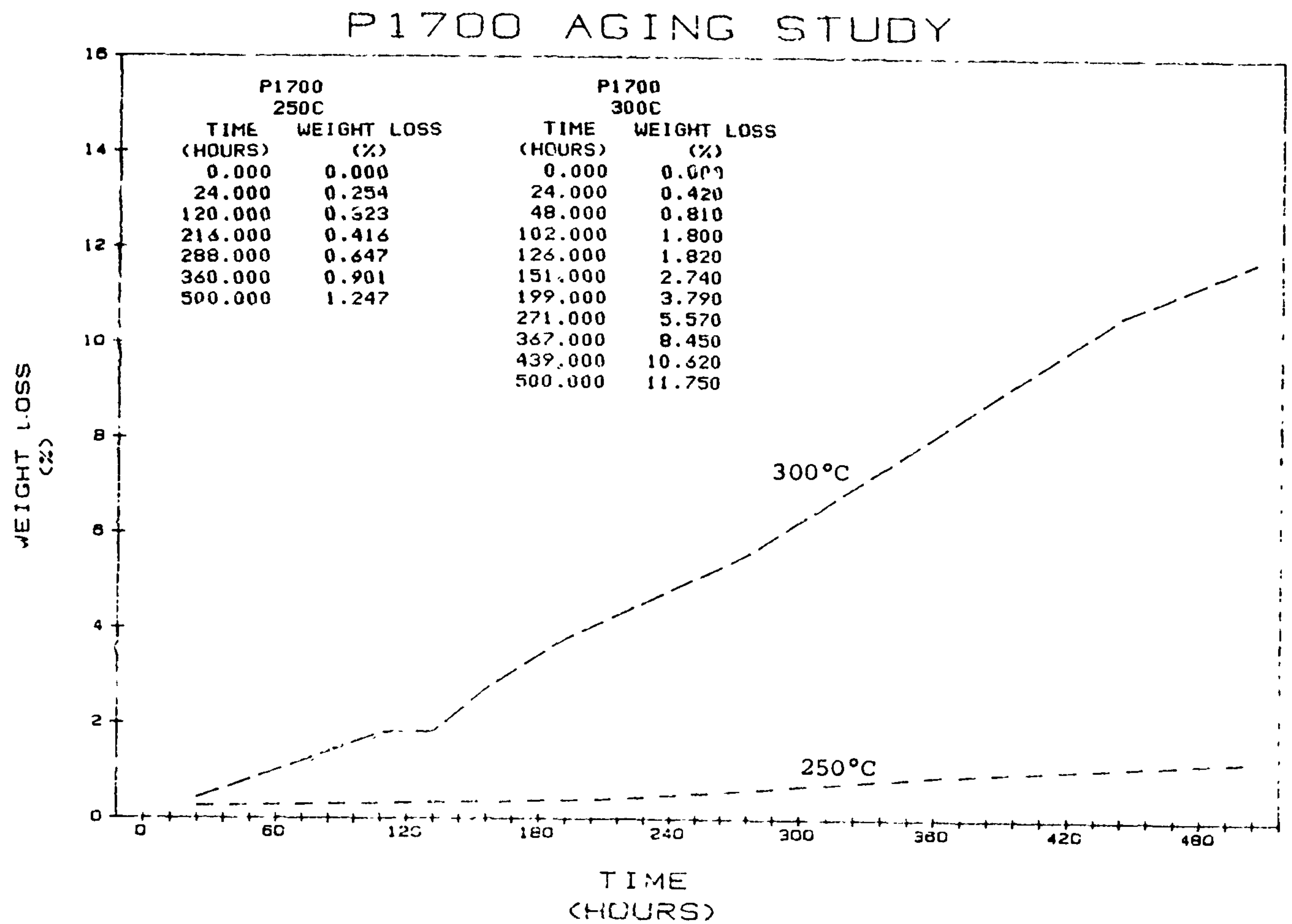


Figure 78. P-1700 Polysulfone 250°C:300°C Long Term Aging Weight Loss Profile.

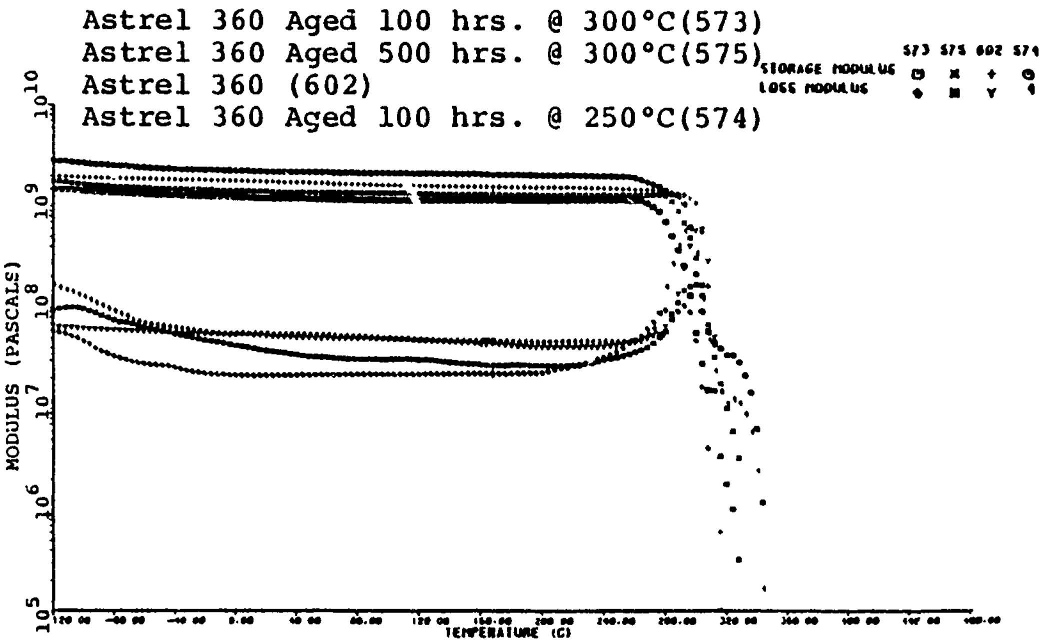


Figure 79. Aged Astre. 360 Polysulfone DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

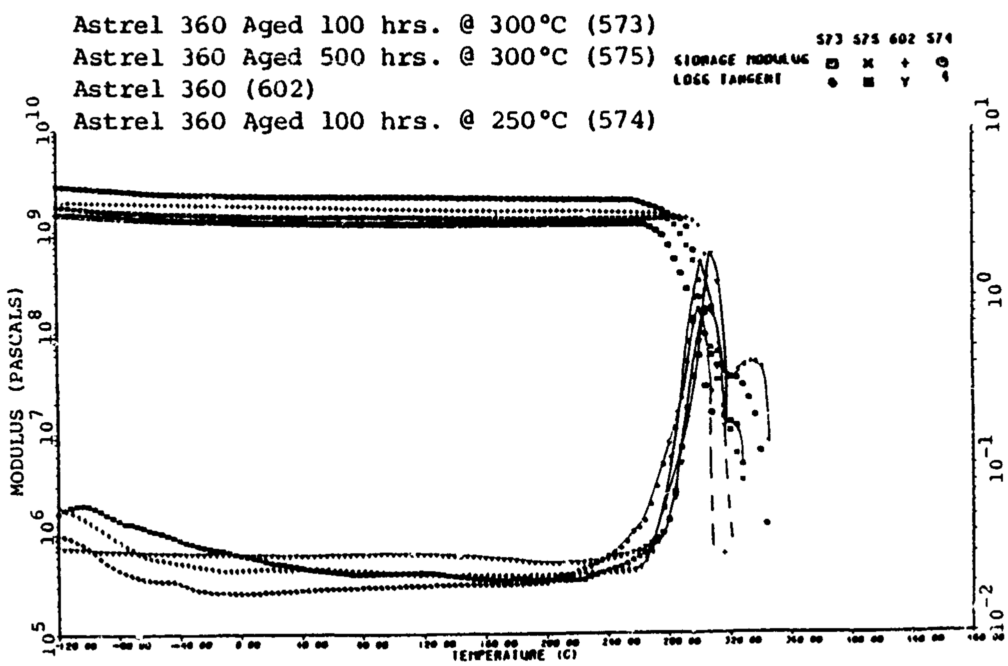


Figure 80. Aged Astrel 360 Polysulfone DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

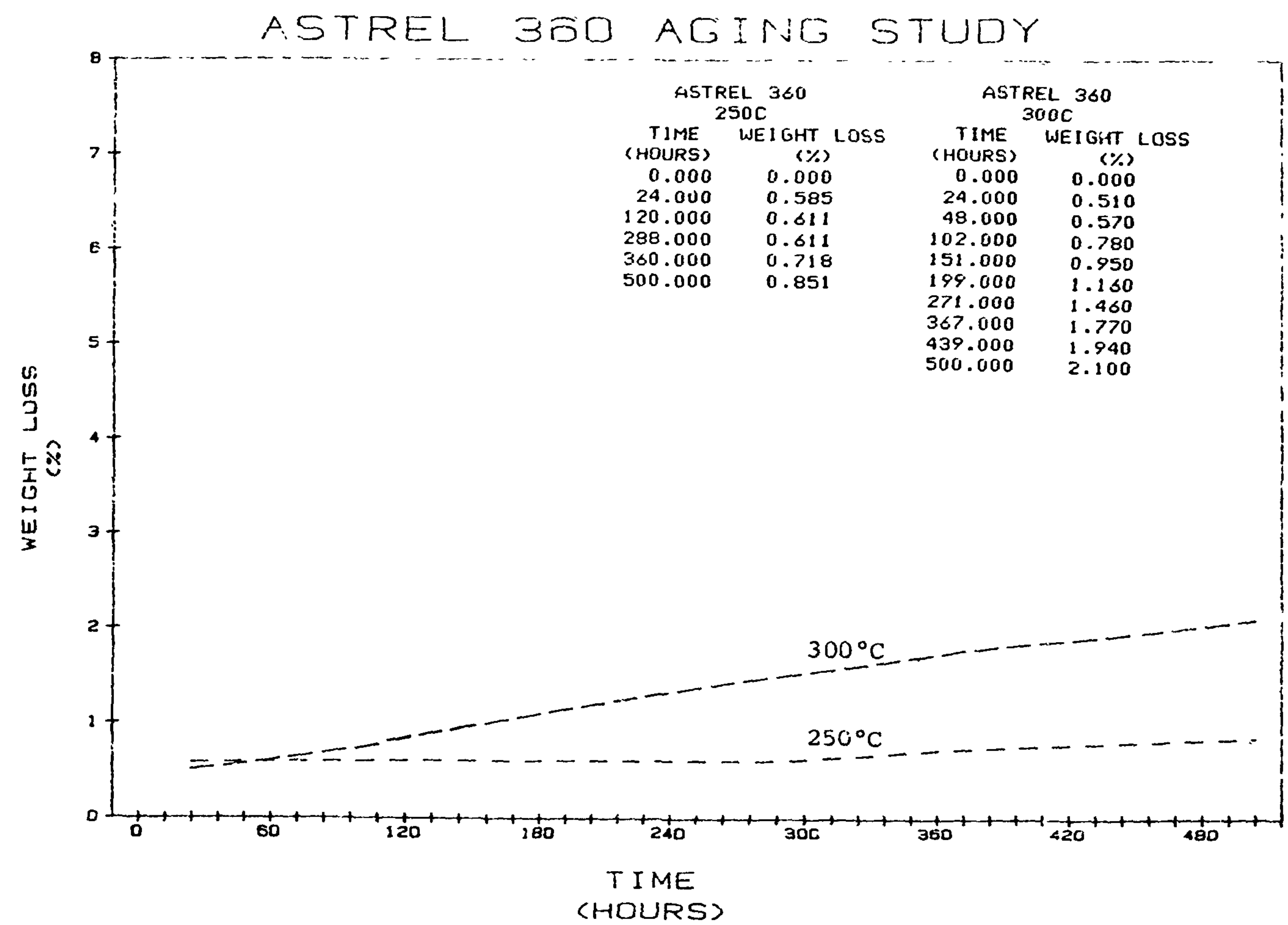


Figure 81. Astrel 360 Polysulfone 250°C:300°C Long Term Aging Weight Loss Profile.

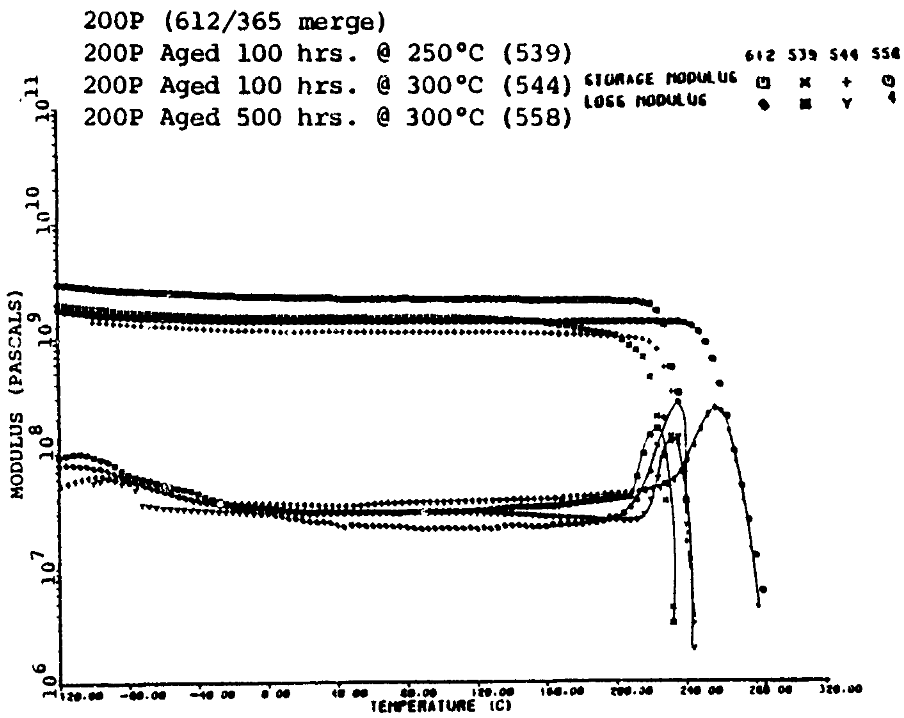


Figure 82. Aged 200P Polysulfone DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

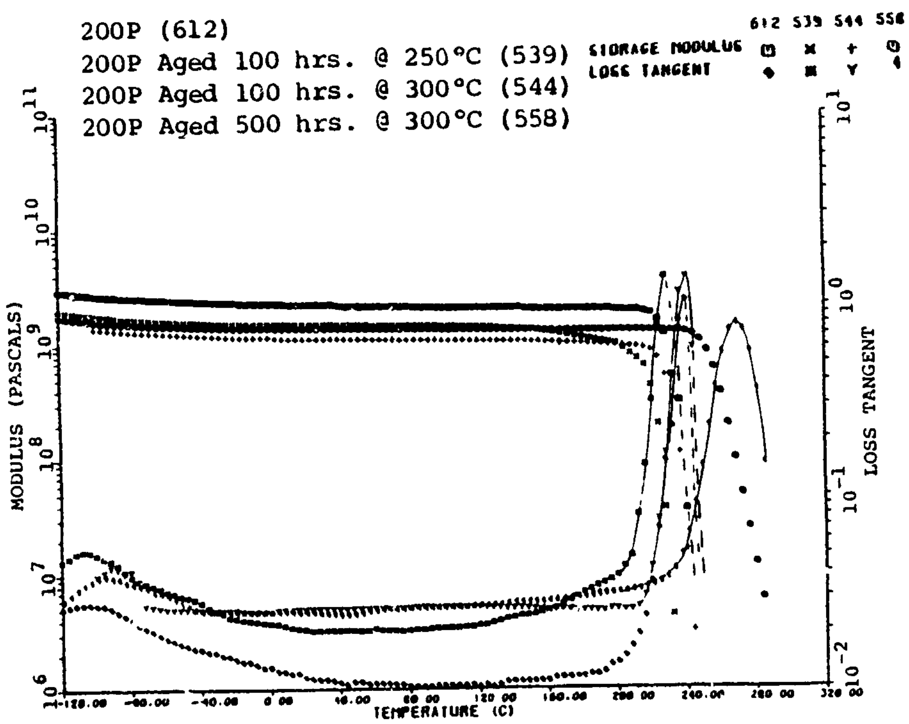


Figure 83. Aged 200P Polysulfone DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

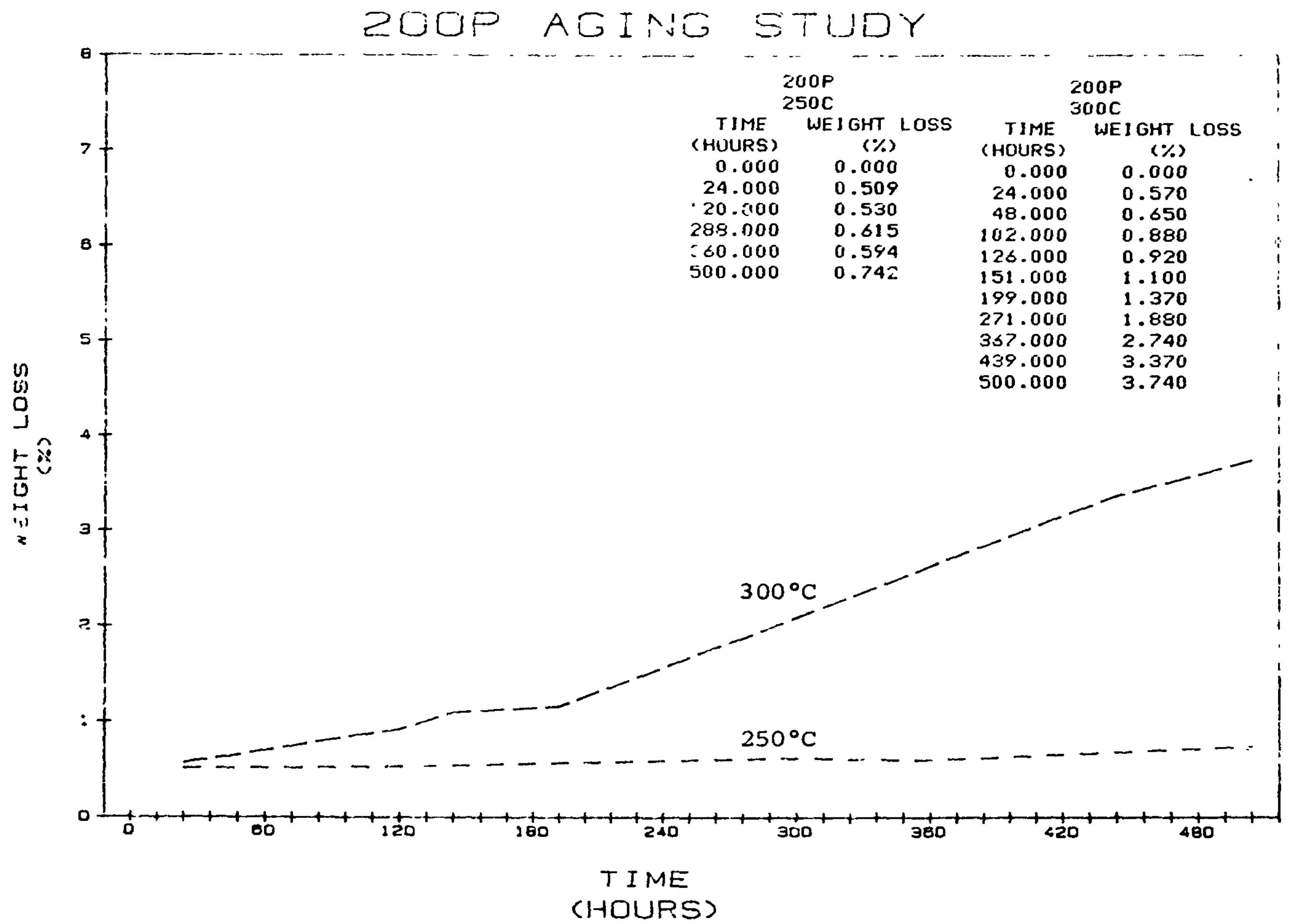


Figure 84. 200P Polysulfone 250°C:300°C Long Term Aging Weight Loss Profile.

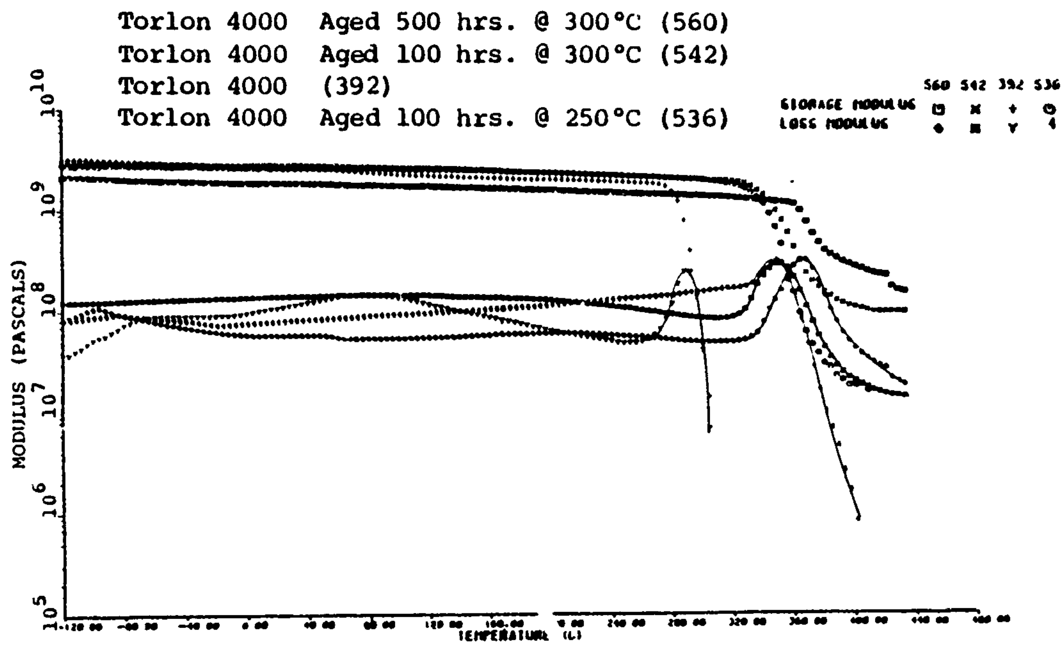


Figure 85. Aged Torlon 4000 Polyamide-imide DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

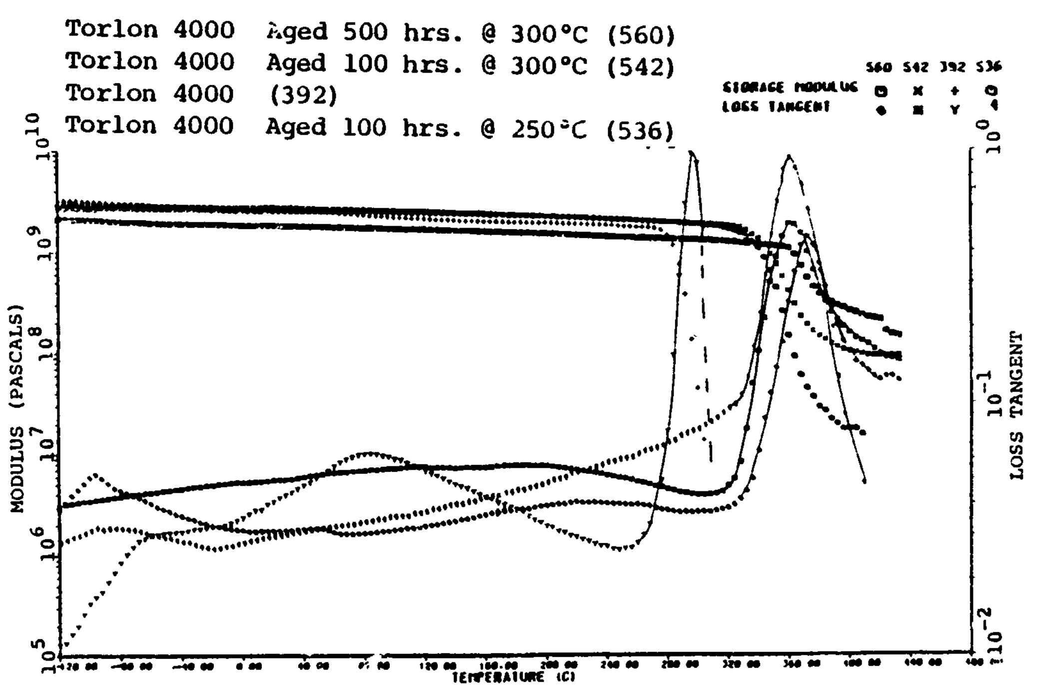


Figure 86. Aged Torlon 4000 Polyamide-imide DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

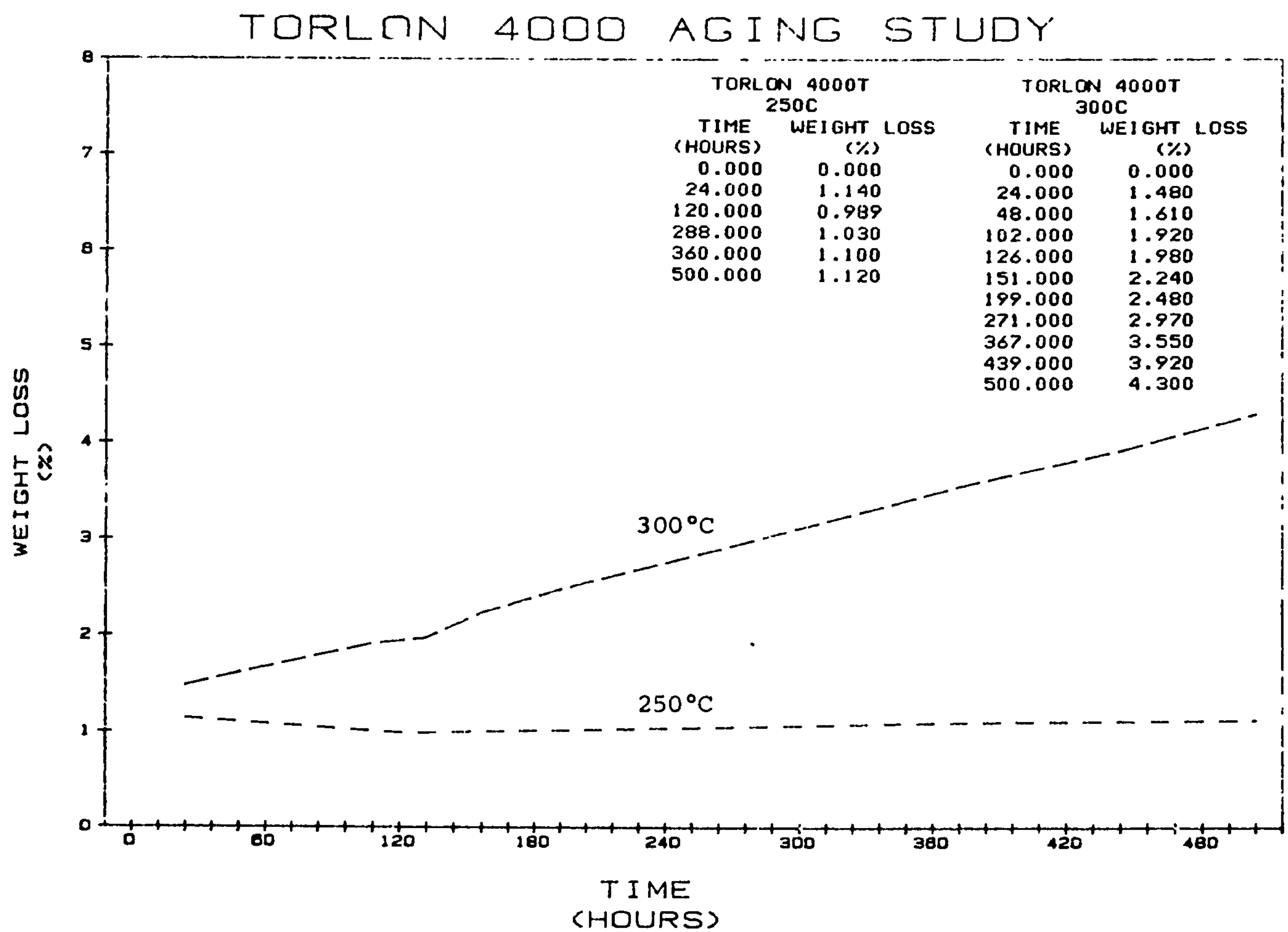


Figure 87. Torlon 4000 Polyamide-imide 250°C:300°C Long Term Aging Weight Loss Profile.

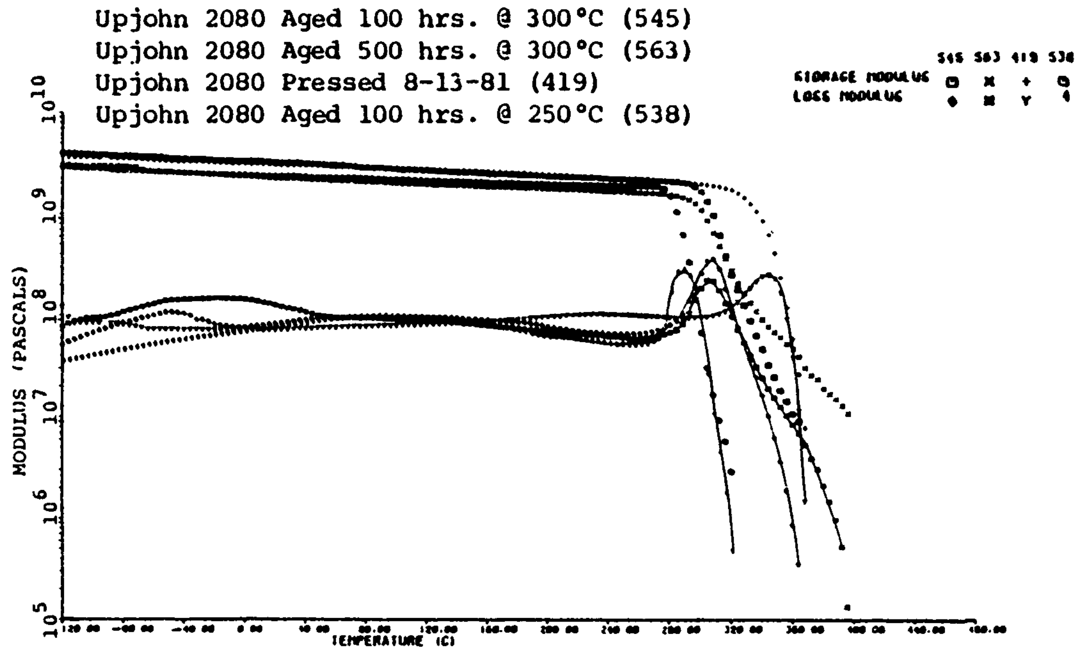


Figure 88. Aged Upjohn 2080 Polyimide DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

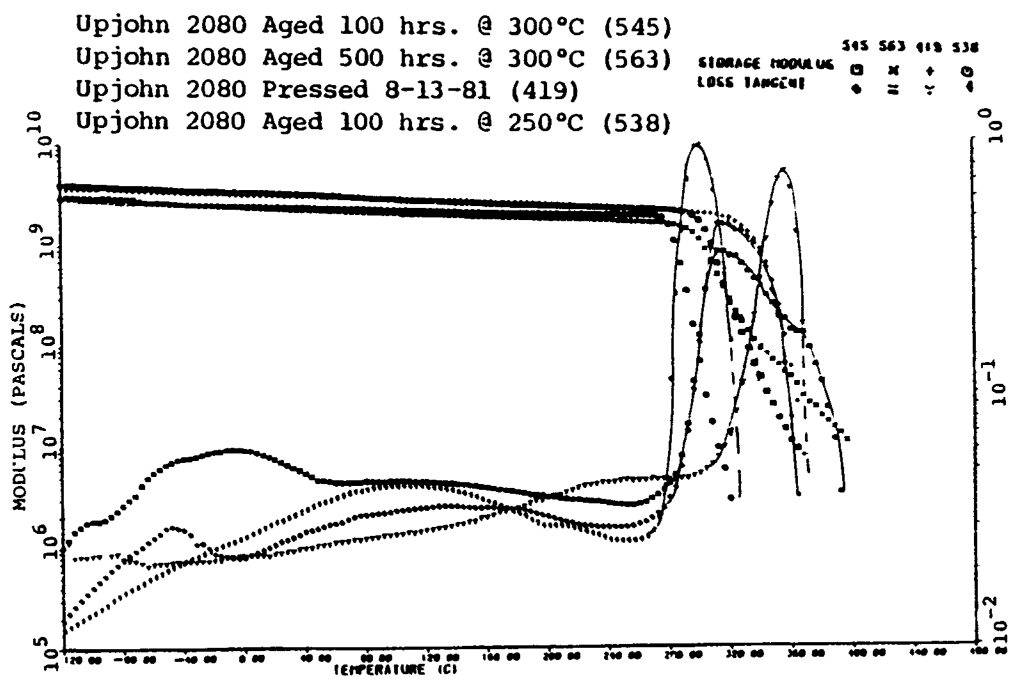


Figure 89. Aged Upjohn 2080 Polyimide DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

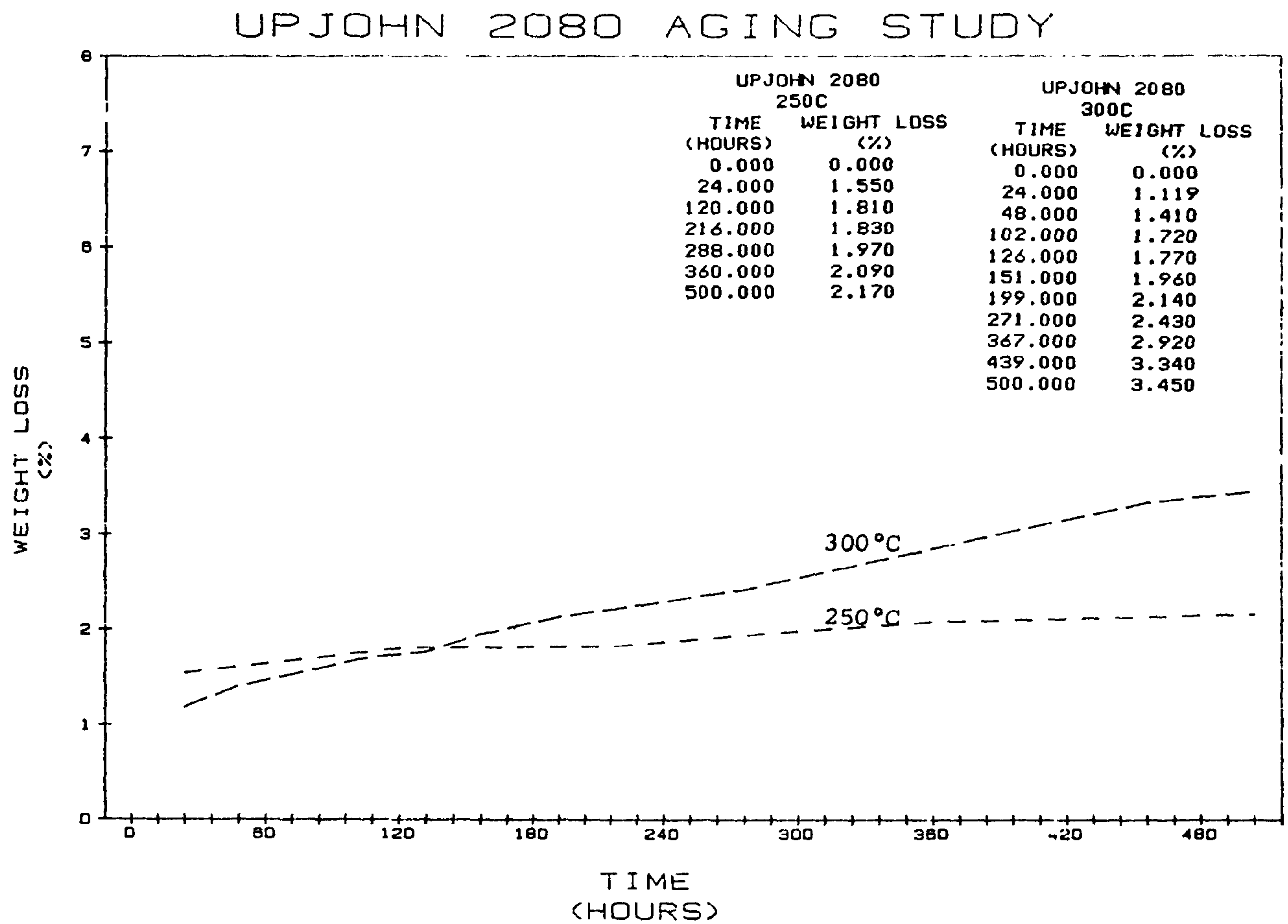


Figure 90. Upjohn 2080 Polyimide 250°C:300°C Long Term Aging Weight Loss Profile.

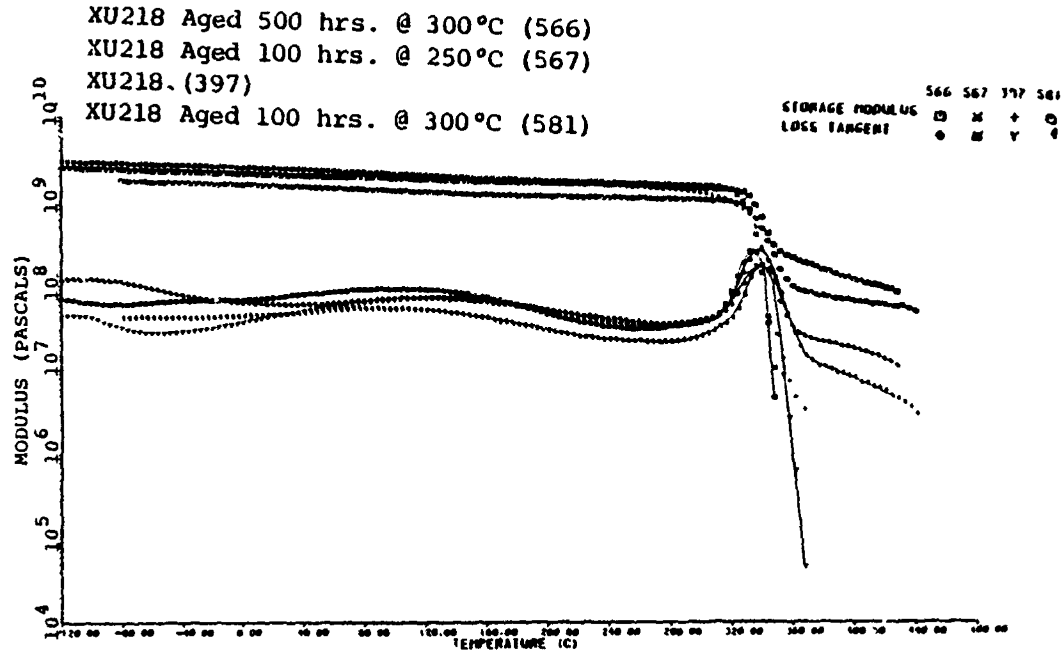


Figure 91. Aged XU 218 Polyimide DMA Storage and Loss Modulus Data Compared with Unaged Polymer.

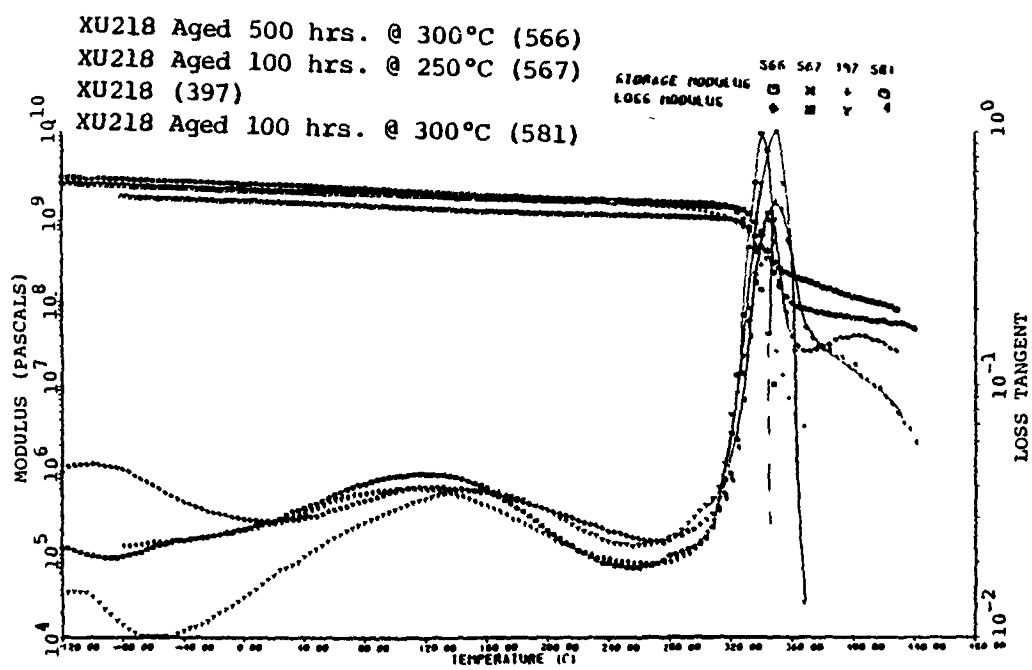


Figure 92. Aged XU 218 Polyimide DMA Storage Modulus and Loss Tangent Data Compared with Unaged Polymer.

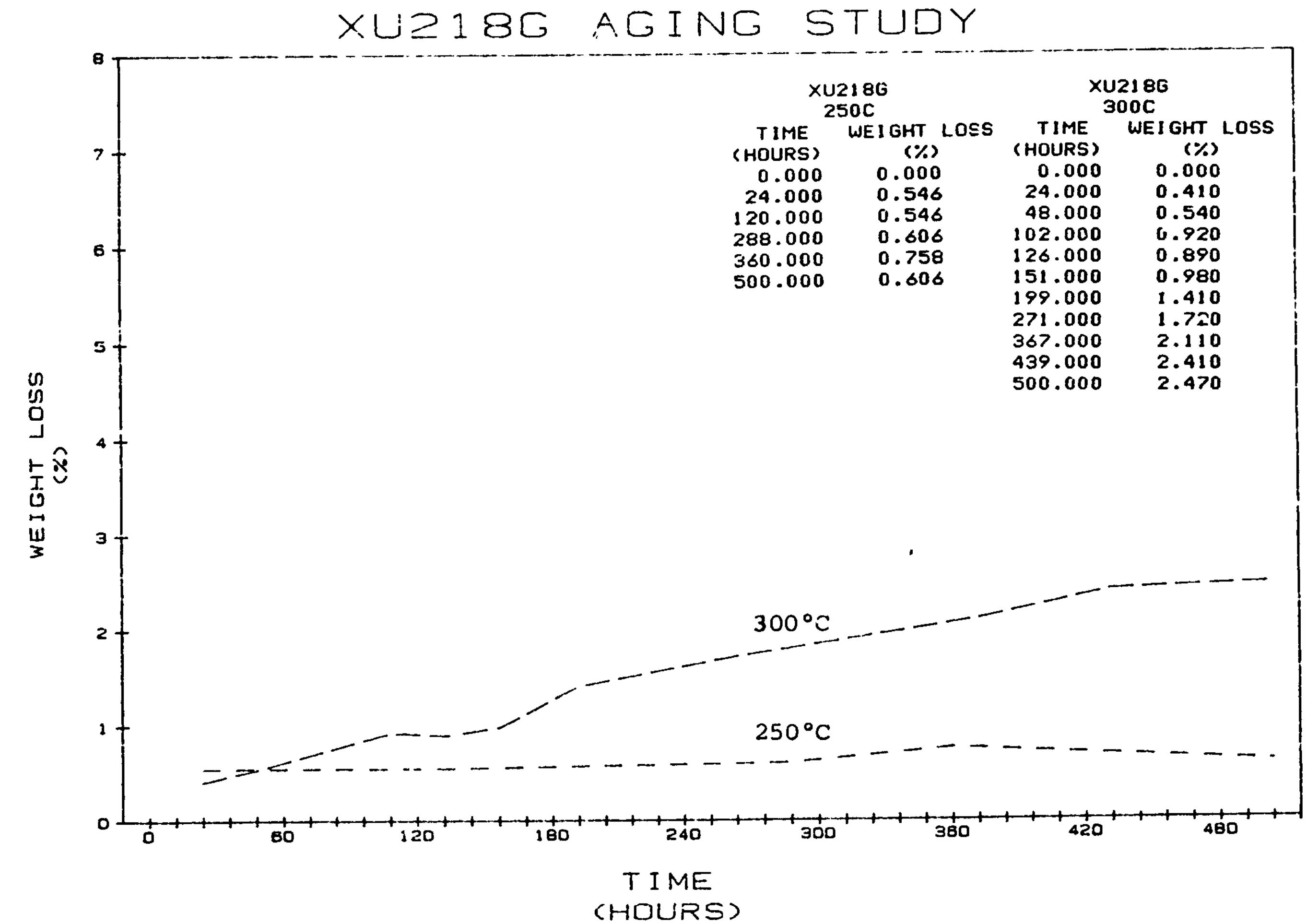


Figure 93. XU 218 Polyimide 250°C:300°C Long Term Aging Weight Loss Profile.

modulus curve above T_g. The changes observed for the polysulfones are far less significant. Little change in properties and T_g values are apparent except in the case of 200P. Some of the variations in modulus observed may be attributed to sample distortion during aging.

It is to be emphasized that the results presented are a worst case analysis where air is present in addition to heat. Polyimides are known to be somewhat heat sensitive and will undergo a certain amount of chemical reaction and crosslinking in the absence of oxygen. However, this may be limited in practice by addition of suitable stabilizers into the material. Polysulfones, on the other hand, are relatively inert in the absence of oxygen and should exhibit little property change even at 300°C. The addition of fillers, as discussed subsequently, is expected to reduce further any property changes that occur as a result of thermal and thermal/oxidative exposures.

SECTION IV
VIBRATING BEAM TESTS

1. DATA COMPARISON

A comparison of DMA measurements with those obtained by the vibrating beam method was made for three different polymers; P-1800 polysulfone, 200P polysulfone, Torlon 4000 polyimide, and P-1800 polysulfone aged 100 hours in air at 250°C. The data for these materials are provided in nomograph form in Figures 94 through 102 with DMA data (solid curves) drawn in for display purposes onto nomographs constructed from beam data.

The agreement between the DMA and beam data in each case is good particularly if one considers the possible sources of disagreement arising from scatter in the beam data due to low sensitivity of the technique and imperfectly formed beam specimens, difficulty in selecting a correct value of T_O for data reduction, and differences in thermal history between DMA and beam specimens.

The difficulty in selecting a correct value of T_O for nomograph data reduction is illustrated in Figures 96 and 98. Here P-1800 data are reduced at 300°C and 280°C. The 280°C data obviously fit more closely to a uniform set of curves. However, for the other three polymers it was not possible to check the assumed value of T_O as carefully because of greater beam data scatter and fewer beam data points.

The difficulty in obtaining the correct reduced temperature nomograph arises when using DMA data because the correct value of T_O needs to be used to place the data onto the nomograph. At present this value cannot be determined empirically unless one has multiple resonance mode or (equivalently) multiple frequency dynamic curves. The single resonance mode DMA curve can be placed anywhere on the nomograph without having to meet any superposition criteria. Thus by itself, a DMA curve does not define a unique nomograph plot unless T_O is known a-priori.

Aged P-1800

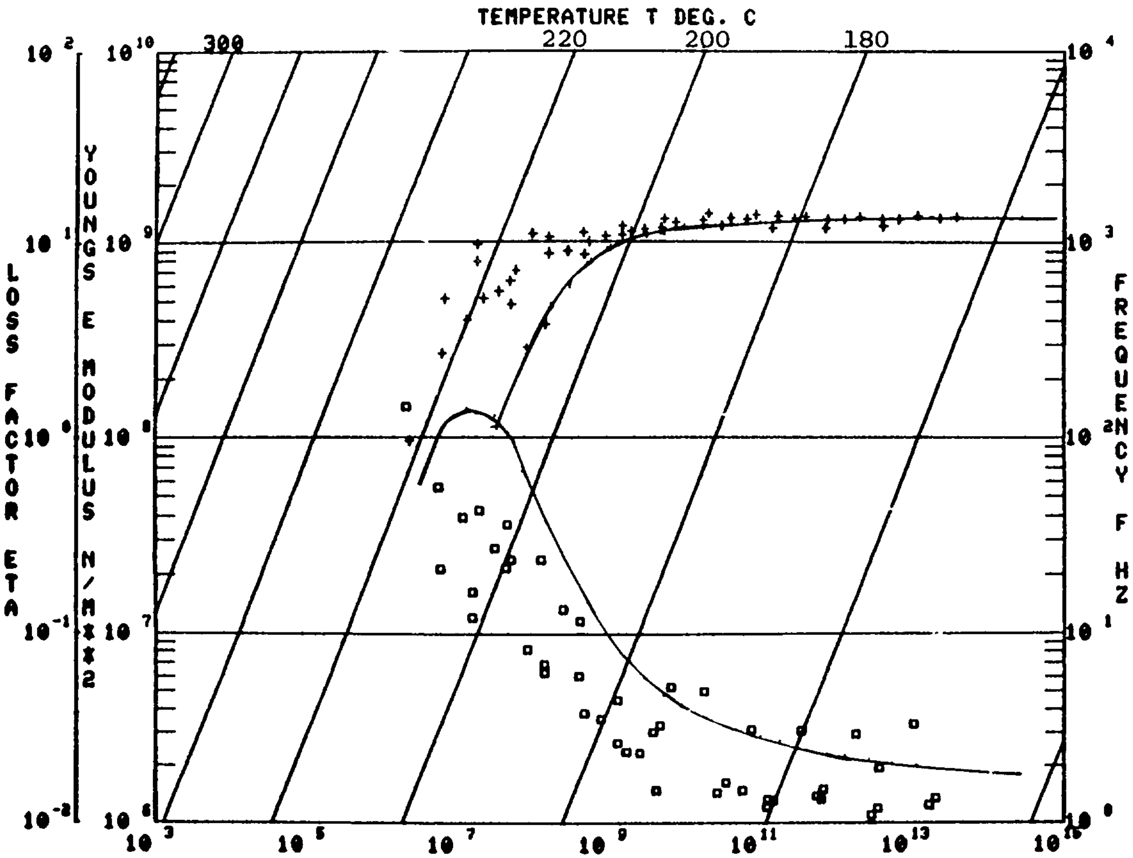


Figure 94. Reduced Temperature Nomograph for Aged P-1800 Polysulfone; Data Points Are From Vibrating Beam Experiment, Solid Lines are DMA Curves, (Data from Figure 95), T_O=300°C.

Aged P-1800

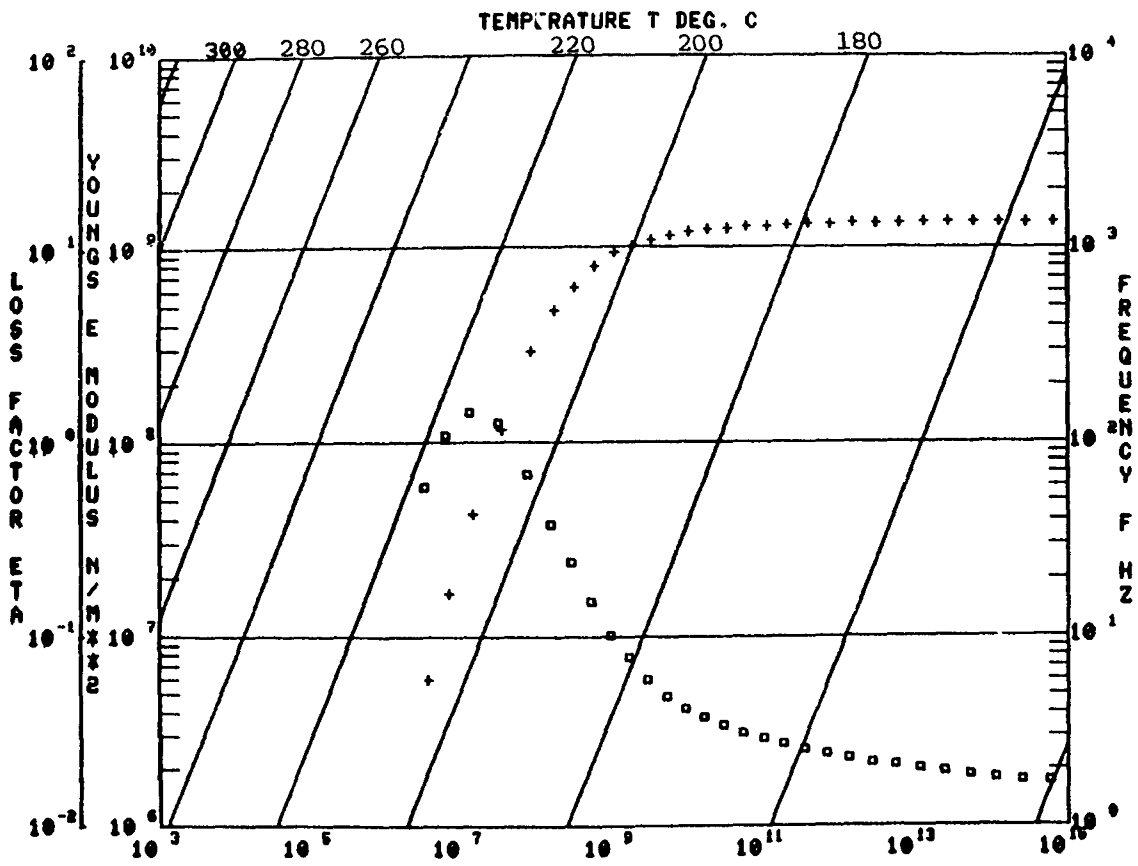


Figure 95. Reduced Temperature Nomograph of DMA Data for Aged P-1800 Polysulfone, T_O=300°C.

P-1800

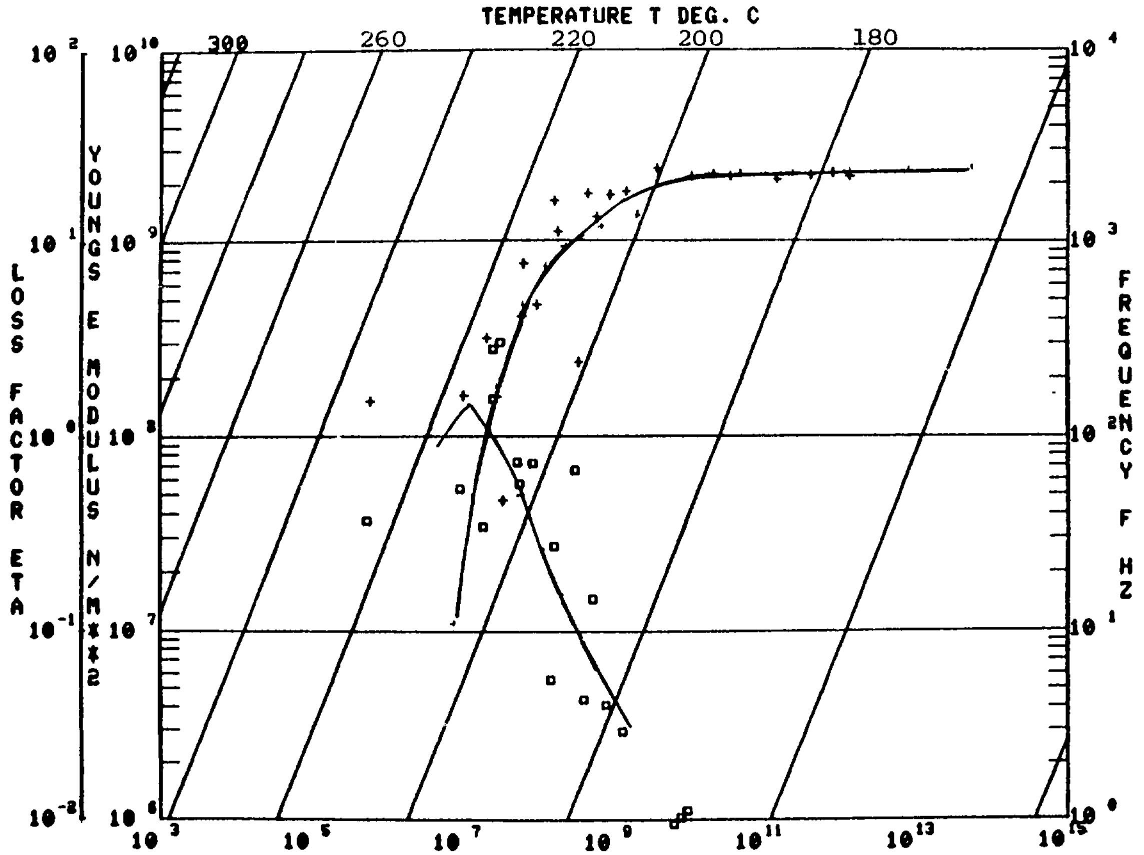


Figure 96. Reduced Temperature Nomograph for P-1800 Polysulfone; Data Points Are For Vibrating Beam Experiment, Solid Lines Are DMA Curves, (Data from Figure 97), T_O=300°C.

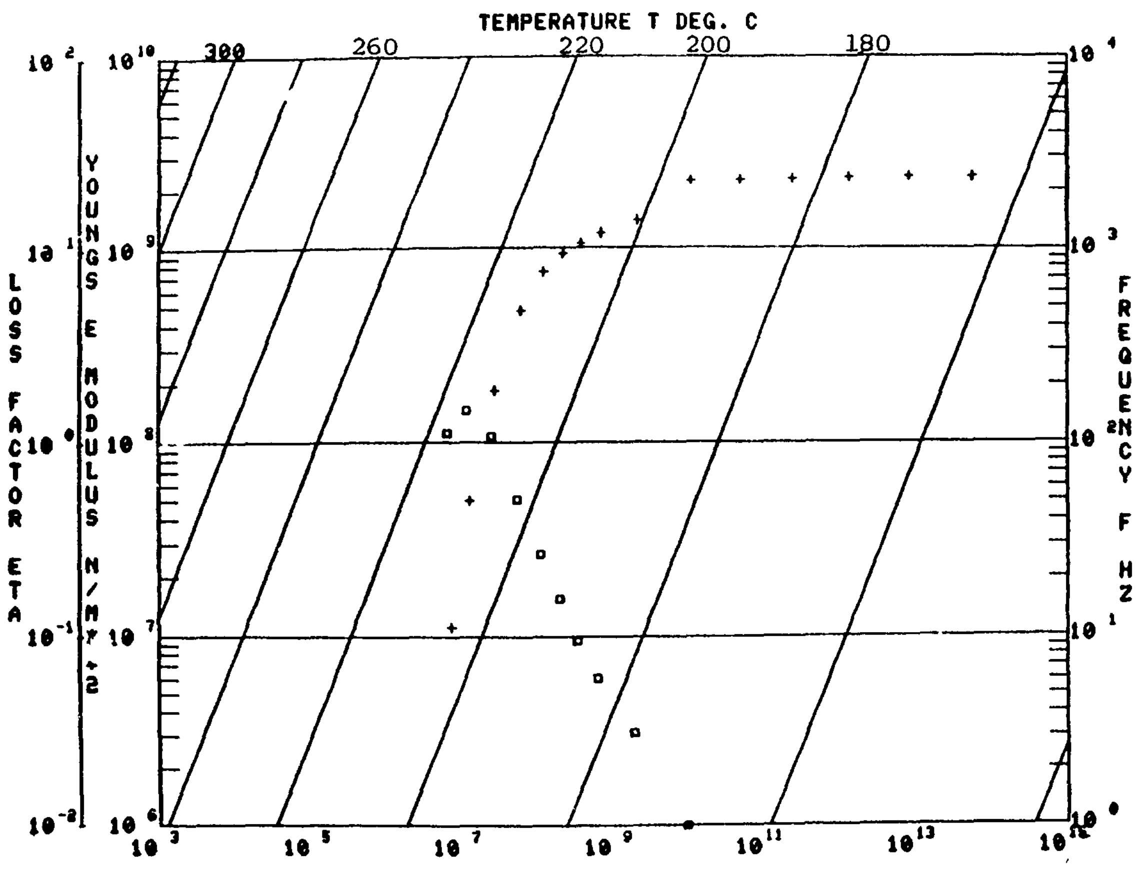


Figure 97. Reduced Temperature Nomograph for DMA Data of P-1800 Polysulfone, T_O=300°C.

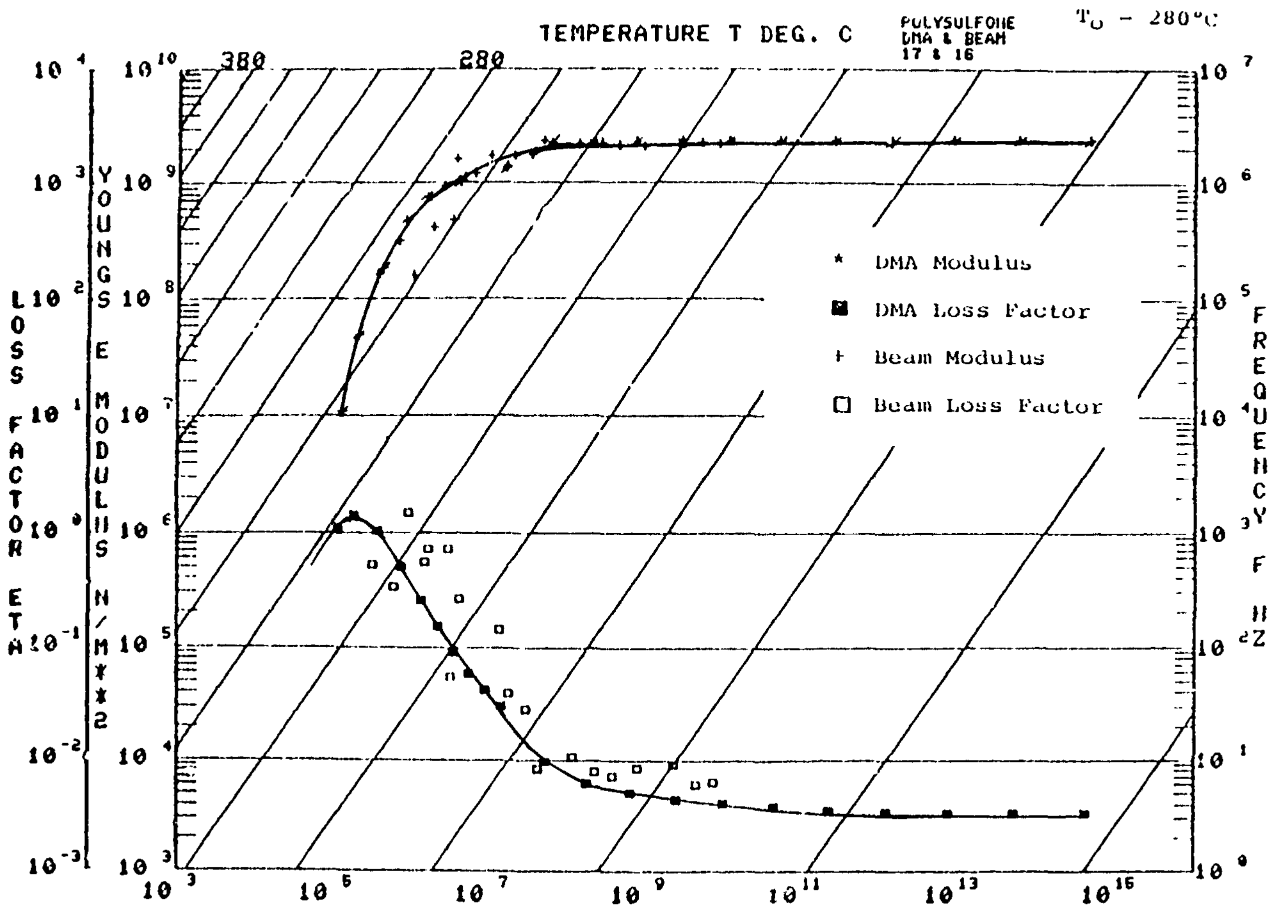


Figure 98. Reduced Temperature Nomograph for P-1800 Polysulfone Comparing DMA and Vibrating Beam Data; T_o = 280°C.

Torlon 4000

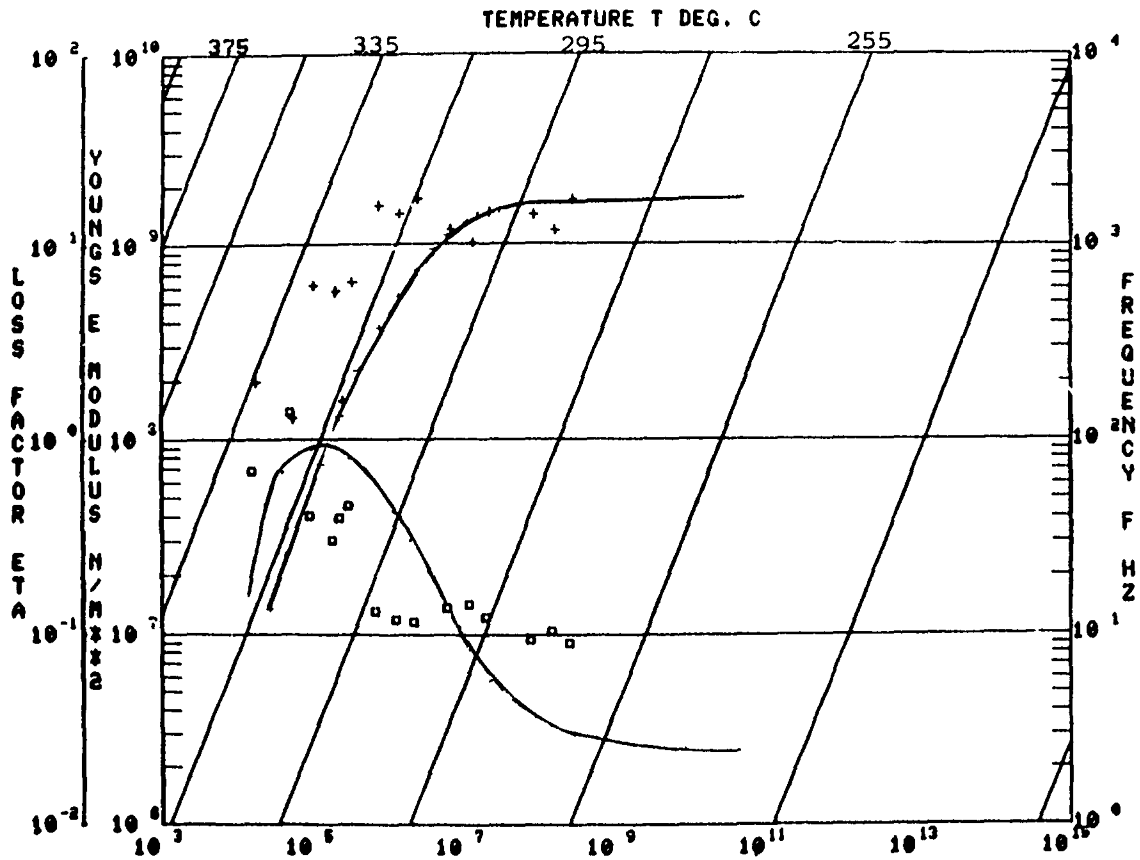


Figure 99. Reduced Temperature Nomograph for Torlon 4000 Polyimide Comparing Vibrating Beam Data Points with DMA Data (DMA Data from Figure 100), Solid Curves, T_O=375°C.

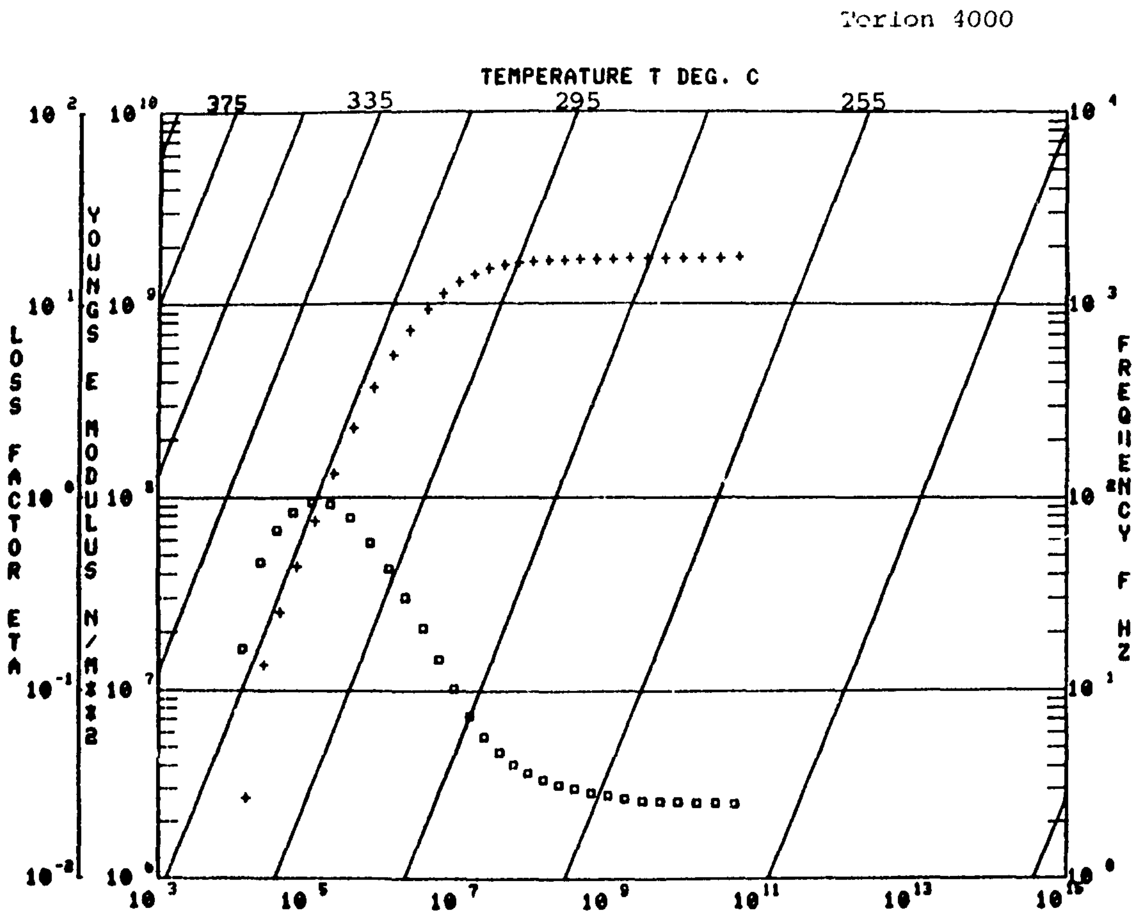


Figure 100. Reduced Temperature Nomograph for DMA Data of Torlon 4000 Polyimide, T_O=375°C.

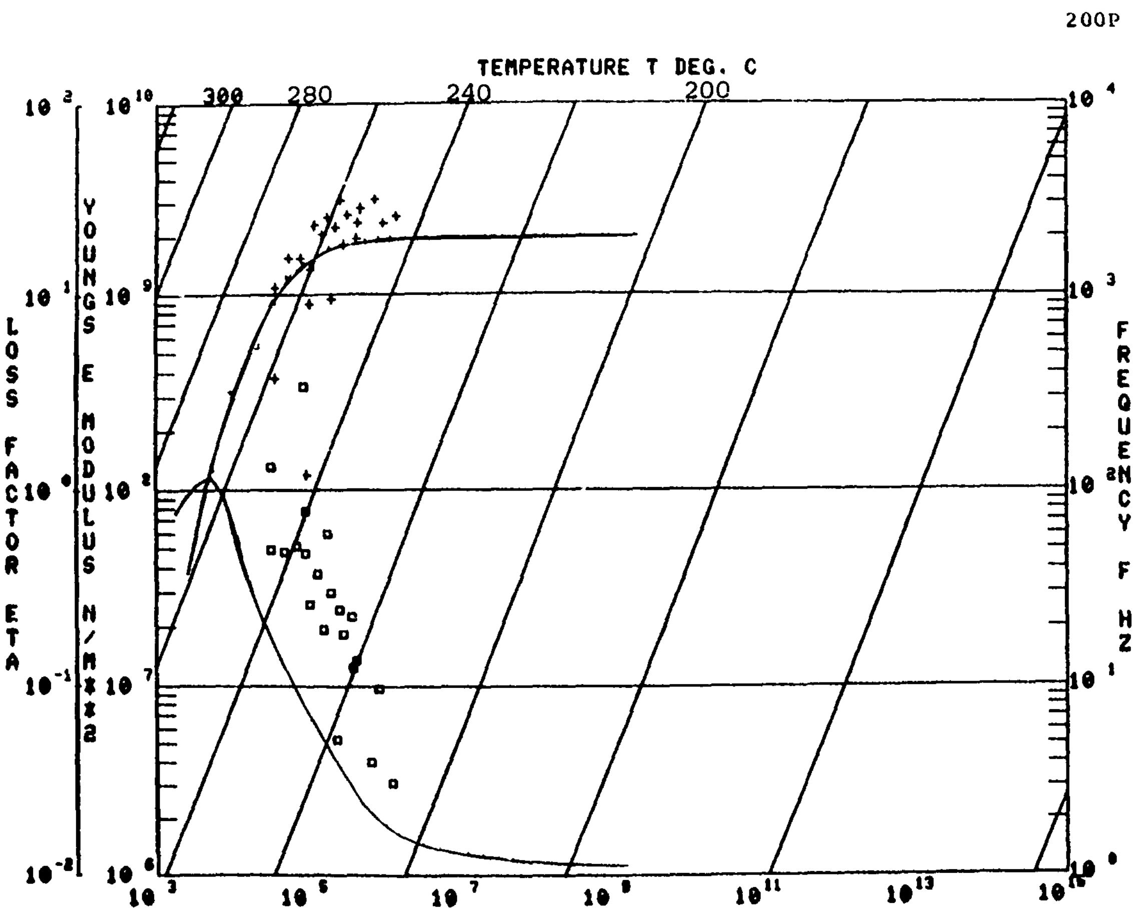


Figure 101. Reduced Temperature Nomograph for 200P Polysulfone Comparing Vibrating Beam Data Points With DMA Data (DMA Data from Figure 102), Solid Curves, T_O=300°C.

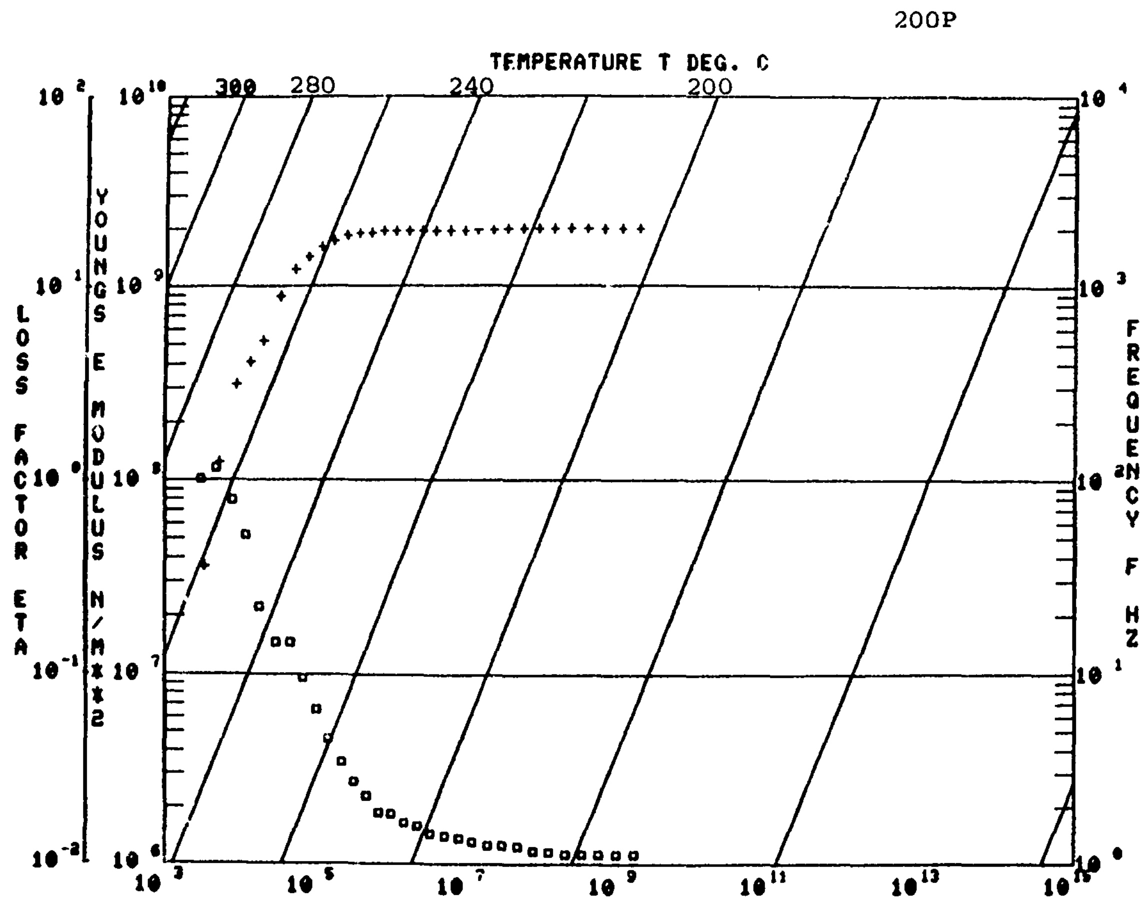


Figure 102. Reduced Temperature Nomograph for DMA Data of 200P Polysulfone, T_O=300°C.

The correct value of T_o depends on the constants of the WLF equation used for data reduction. For the Jones equation T_o is approximately T_g + 50°C (as determined by an independent method) at temperatures up to approximately 200°C. The specification of correct T_o values without additional information beyond the DMA curves is now being studied at UDRI in collaboration with technical specialists from DuPont Instruments.

2. BEAM CONSTRUCTION AND PROCESSING METHODS

The methods used for beam specimen preparation are discussed briefly here in order to describe various difficulties encountered in fabricating beams coated with rigid polymers such as those studied in this program. The beams used were carbon steel with magnetic tips attached. The the case or P-1800, the first polymer characterized, polymer was applied to the beam by compression molding P-1800 powder at 250°C with a platten pressure of 20,000 lbs. The mold was cooled slowly for several hours under 250 lb. pressure, resulting in a coating thickness of 52 mils. The P-1800 coating was firmly attached to approximately 95% of the beam surface. But of particular importance, the root end of the polymer was firmly attached. Surface preparation of the metal included sand blasting with 200 mesh sand, soaking in methylene chloride solvent, etching with 5% phosphoric acid/ distilled H_2O, rinsing with distilled H_2O, drying with a heat gun, and immediately processing to attach the polymer coating.

An important problem encountered with fabricating beams having thick coatings of high T_g polymers is thermal contraction of the coating. Shrinkage is sufficient for these types of materials to cause appreciable bending of the beam at ambient temperatures. The stresses induced by this means tend to cause debonding of the coating. This can be avoided by careful handling and avoiding flexing the beam. After the beam is heated up to test temperatures it straightens out so that interfacial stresses are no longer a problem.

In cases where it is most difficult to adhere the polymer to the beam surface several alternative procedures for sample fabrication have been suggested. These include the following:

(1) Molding a cast polymer sheet directly to the beam;

(2) Fabricating a double sided beam in order to equalize thermal stresses;

(3) Solvent welding polymer to the beam;

(4) Applying cast polymer sheet to a beam surface preheated to high temperature (700-750°F); and

(5) Using a specialized adhesive to bond the polymer to the beam.

Subsequent samples, 200-P, Torlon 4000, and Aged P-1800, were applied using a hybrid of techniques (3) and (5) with an adhesive mixture of the specific polymer dissolved in dimethylformamide (DMF) solvent (5% by volume of polymer). The adhesive mixture was applied to the treated beam surface using a doctor blade to give a polymer thickness of approximately 0.002 inch (2 mils). Forty (40) mil strips of premolded polymer were then placed on the coated beam and the composite was placed in a preheated molding press at 285°F (140°C) for 1 hour under 5 tons ram pressure. The mold was cooled under pressure to room temperature and the sample was contained at that pressure for 16 hours.

The difficulties encountered in fabricating beam specimens for this study arose in part from the thickness required for beam measurements (40-50 mils) of sufficient sensitivity. In general, it is expected that different methods will need to be used for different polymers. The problems encountered with adhesion of polymers on beam specimens are not necessarily the same as those that will be encountered during application of these polymers for damping treatment. Application requirements will depend on nature of the substrate, thickness of polymer required, and the actual design configuration. The

application to any of the polymers studied in this program to a damping device is considered beyond the scope of the current program.

SECTION V

USE OF FILLERS TO IMPROVE DAMPING PERFORMANCE

1. PLATELET GRAPHITE AND GRAPHITE/CARBON BLACK COMPOSITIONS

One objective of the current program was to evaluate the improvement in damping properties gained by using platelet graphite as a filler in typical high temperature polymers. The use of platelet graphite by itself or in combination with carbon black has been found to produce enhanced damping in other polymers.

More specifically, when graphite particles in the form of platelets about 50 μm across are added to a resin, damping performance of the composite is found to be either similar to or better than that of the polymer. This is true even though the resin volume may be reduced by as much as 50%. The effect is most pronounced when a small amount of carbon black is added to the formulation. Thus the presence of the platelet filler introduces an additional energy dissipation mode.

The mechanism(s) involved in enhanced damping through use of a platelet filler is not known. Those suggested include intraparticle slippage, polymer-particle slippage, and enhanced localized shear due to formation of microscopic constrained layer dampers. The latter concept termed a "stress riser" hypothesis seems promising from the view that it explains the role of carbon black in enhancing the damping derived from platelet filler particles. According to this view the role of carbon black particles is to separate the graphite platelets so that they do not impinge on each other. This enables a greater percentage of platelets to assume a parallel plate configuration and provide enhanced damping capacity within the material.

The mixing process used is an important aspect of incorporating these fillers into a polymer. We used a high-shear

torque rheometer-mixer to blend platelet graphite 6894 and SAF carbon black into P-1700 polysulfone. Several mixing times (from 2-20 minutes) were used at a constant mixing rate of 32 RPM and a maximum processing temperature of 263°C. Control samples of P-1700 and P-1700/SAF also were mixed under the same conditions for 20 minutes. The amounts of SAF and 6894 Graphite in various samples were 3% by weight and 33% by volume, respectively.

The DMA data for various compositions of P-170C with graphite and P-1700 with graphite-SAF are shown in Figures 103 through 106. Figures 103 and 104 compare the storage modulus, loss modulus and loss tangent values for P-1700/graphite compositions mixed for various times.

These data indicate that the addition of platelet graphite tends to increase storage and loss modulus values as well as loss tangent values in the glassy state below T_g. Mixing time is important here with shorter mixing times giving higher loss modulus and loss tangent values below T_g. In the glass transition region peak damping intensity is slightly greater as is the breadth of the damping peak when graphite is added.

When both graphite and SAF carbon black are added as in Figures 105 and 106, storage modulus, loss modulus, and loss tangent are increased even more than with graphite alone. The peak loss tangent values and damping peak widths are also increased. In this case longer mixing times produce the greatest changes.

From these preliminary experiments we find that the use of fillers in aromatic chain polymers leads to significant improvements in damping performance. Additional studies of these effects therefore are of considerable interest and should be investigated more thoroughly in a future research or exploratory development effort.

Similar observations were made for mixtures of Torlon 4000 with 50 wt. percent 6894 graphite and 1.5% (volume)

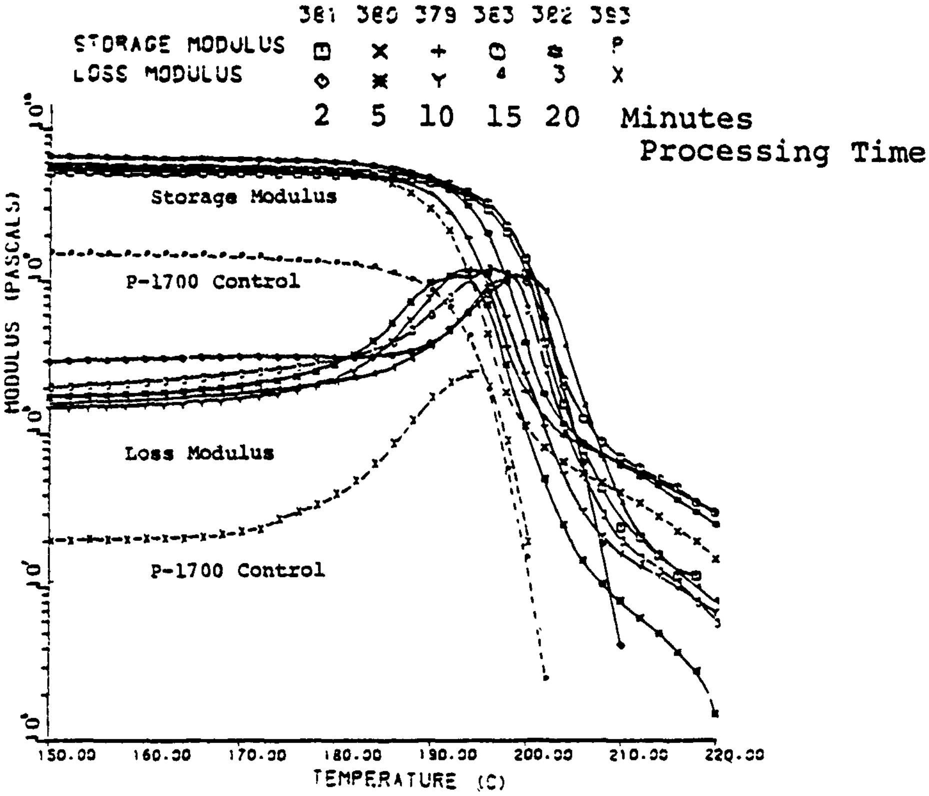


Figure 103. DMA Storage and Loss Modulus Data for P-1700/ Graphite Compounds Mixed for Various Times.

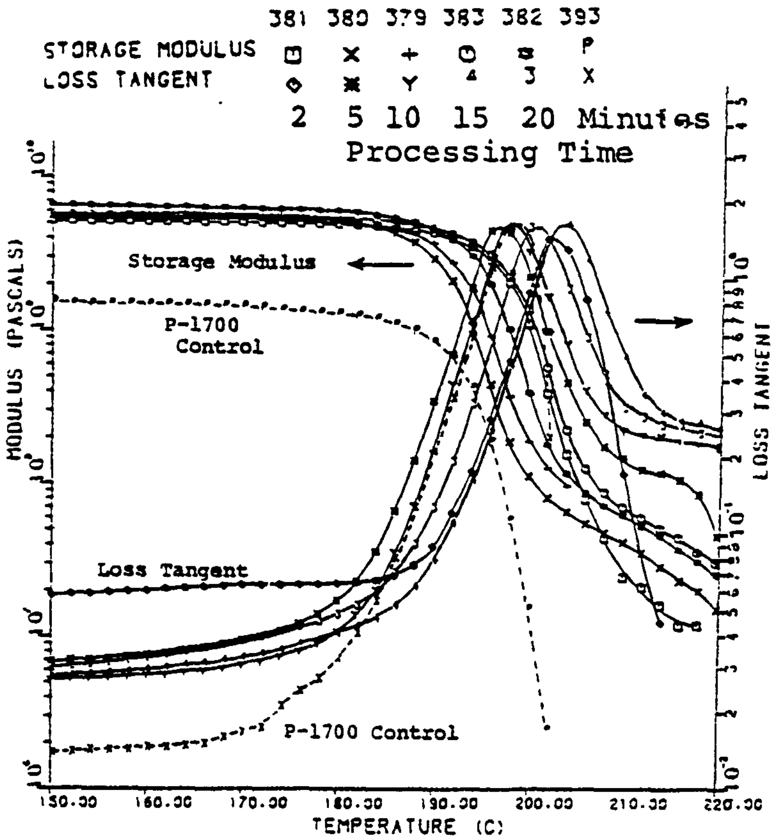


Figure 104. DMA Storage Modulus and Loss Tangent Data for P-1700/Graphite Compounds Mixed for Various Times.

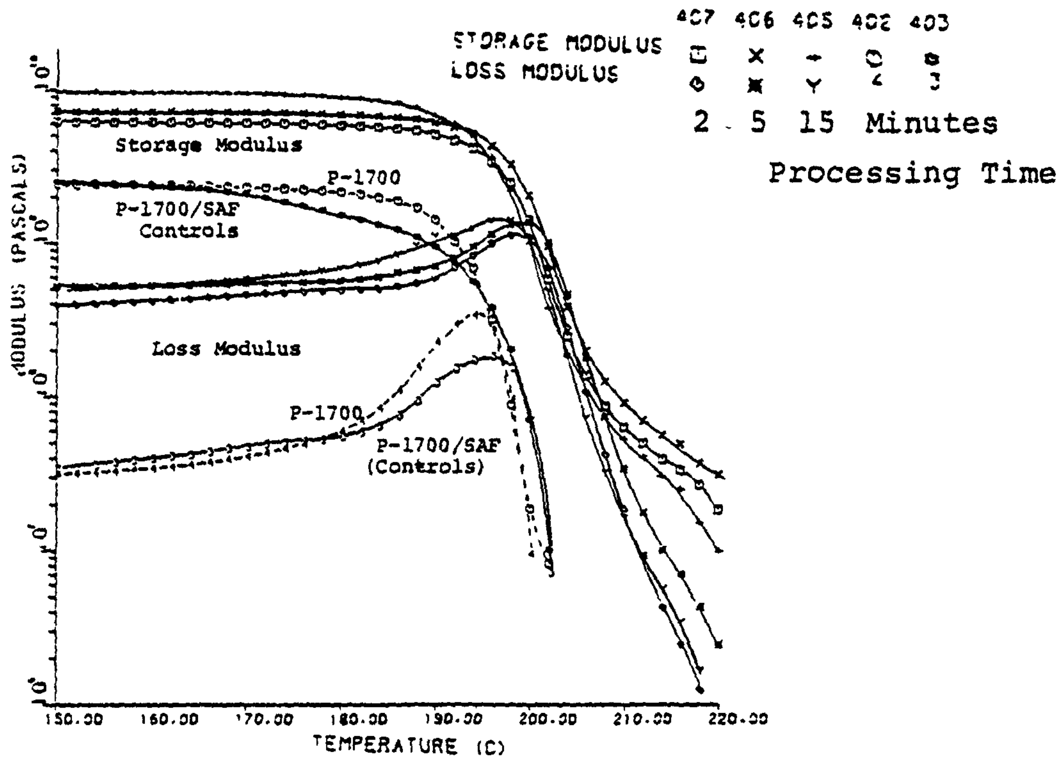


Figure 105. DMA Storage Modulus and Loss Modulus Data for P-1700/Graphite/Carbon Black (SAF) Compounds Mixed for Various Times.

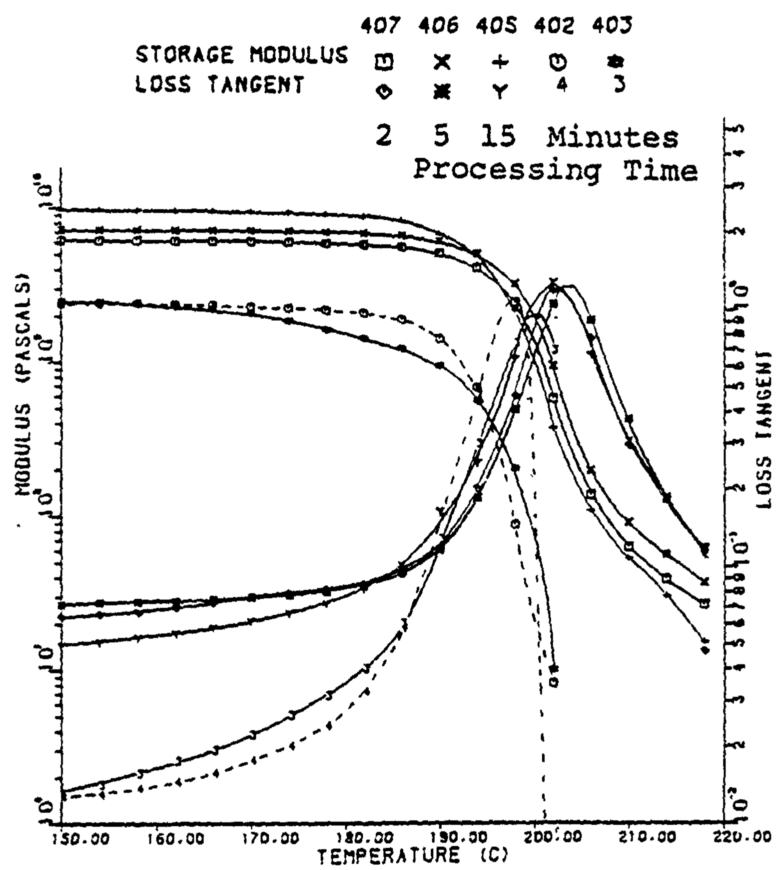


Figure 106. DMA Storage Modulus and Loss Tangent Data for P-1700/Graphite/Carbon Black (SAF) Compounds Mixed for Various Times.

SAF carbon black. Data comparing property differences between powder mixed versus melt mixed specimens are shown in Figures 107 and 108. The trends observed parallel those for the filled P-1700 samples discussed above. Increased processing time improved damping properties and simply incorporating a filler improves the glassy state and transition state damping over that of the unmodified Torlon polymer.

2. FILLED DAMPING FORMULATIONS INCORPORATING A HIGH TEMPERATURE PLASTICIZER

As an adjunct to the initial filled polymer studies we carried the experiments further by experimenting with the addition to filled P-1700 polysulfone of a plasticizer that is nonvolatile and thermally stable. DMA data for such a formulation containing 13.3% by weight of a liquid polyphenylene-ether are presented in Figures 109 through 112. Figures 109 and 110 compare the plasticized P-1700 formulation (Run 489) to P-1700 mixed with platelet graphite (Run 382) but no carbon black. We note that the glass transition is shifted to 134°C from its original value of 196°C. The damping peak for the plasticized composition is broader and the glassy state Young's Modulus value is slightly lower. In Figures 111 and 112 we compare the plasticized formulation (Run 489) to an unplasticized formulation also containing carbon black (Run 406). The plasticized material in this case also has a broader T_g loss dispersion.

These data, although they are not complete, are representative of the type of alteration in damping behavior that can be achieved by formulating with a compatible plasticizer. By changing the amount of plasticizer used it is possible to tailor the range of effective damping within a single polymer or polymer/filler system to various values up to that of the pure polymer.

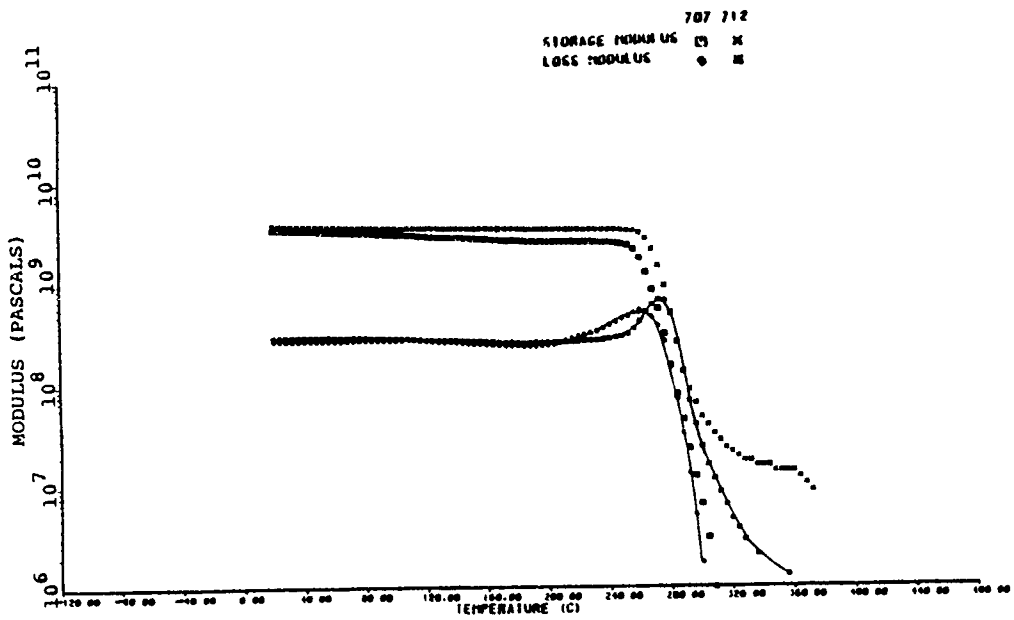


Figure 107. Graphite Filled Torlon 4000 Storage and Loss Modulus Data; (Sample 707) Powder Mixed and Molded, (Sample 715) Intensively Shear Mixed.

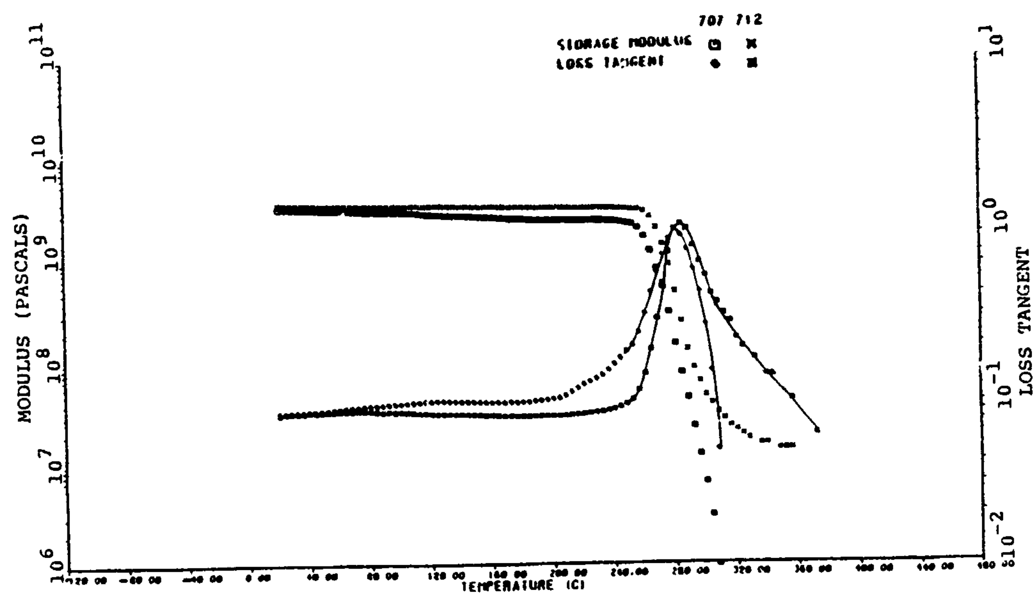


Figure 108. Graphite Filled Torlon 4000 Storage Modulus and Loss Tangent Data; (Sample 707) Powder Mixed and Molded, (Sample 712) Intensively Shear Mixed.

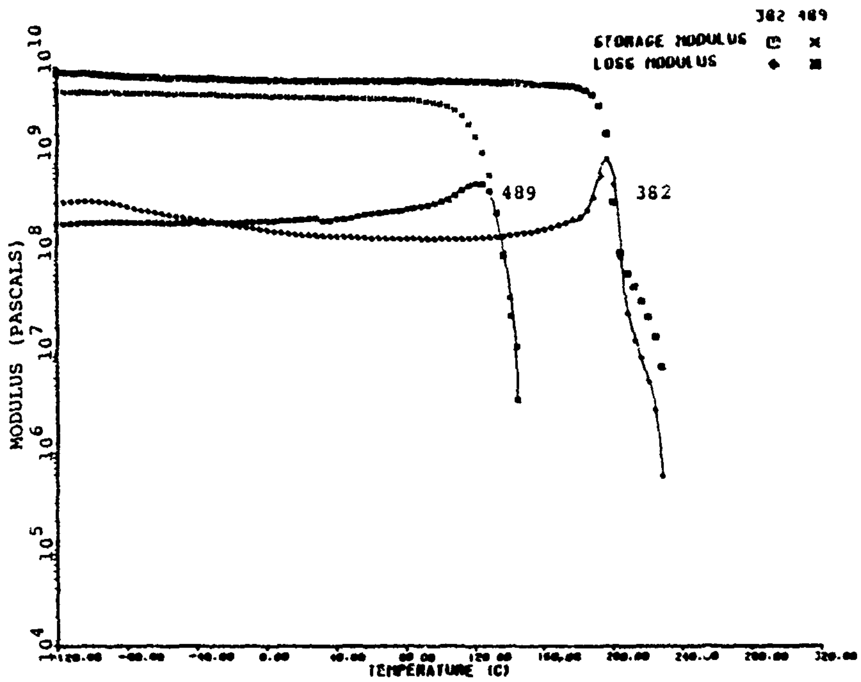


Figure 109. DMA Storage and Loss Modulus Data for P-1700 Polysulfone Formulations of Figure 110.

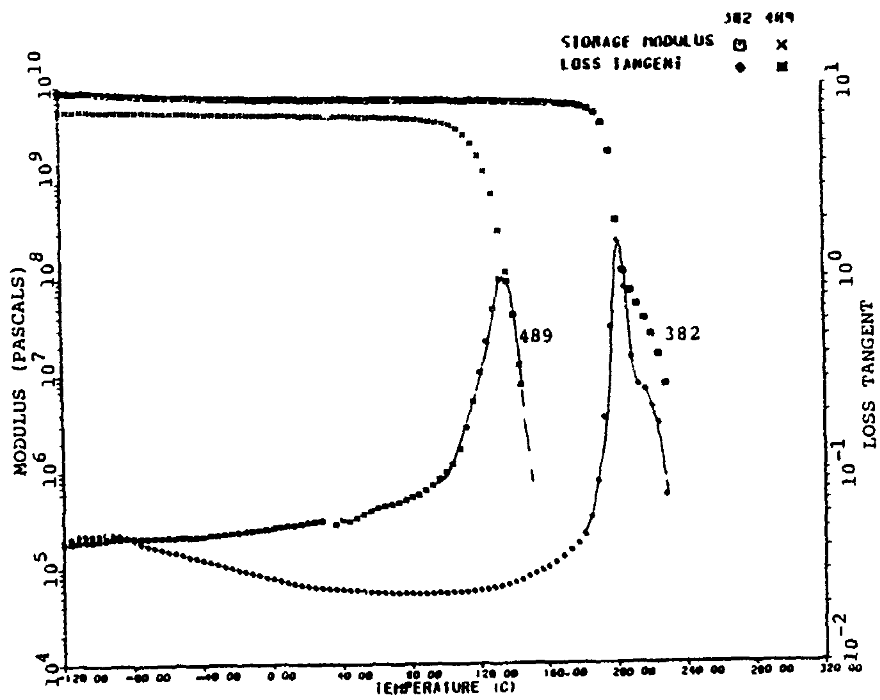


Figure 110. DMA Storage Modulus and Loss Tangent Data for P-1700 Polysulfone Filled with Platelet Graphite; Run 489 with Carbon Black and Plasticizer, Run 382 without Carbon Black and Plasticizer.

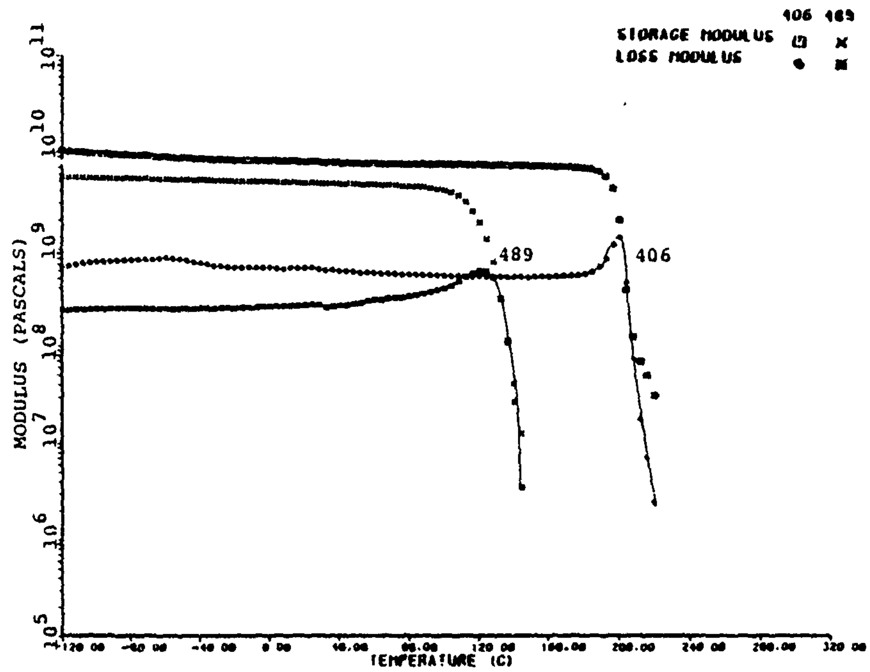


Figure 111. DMA Storage and Loss Modulus Data for P-1700 Polysulfone Formulations of Figure 112.

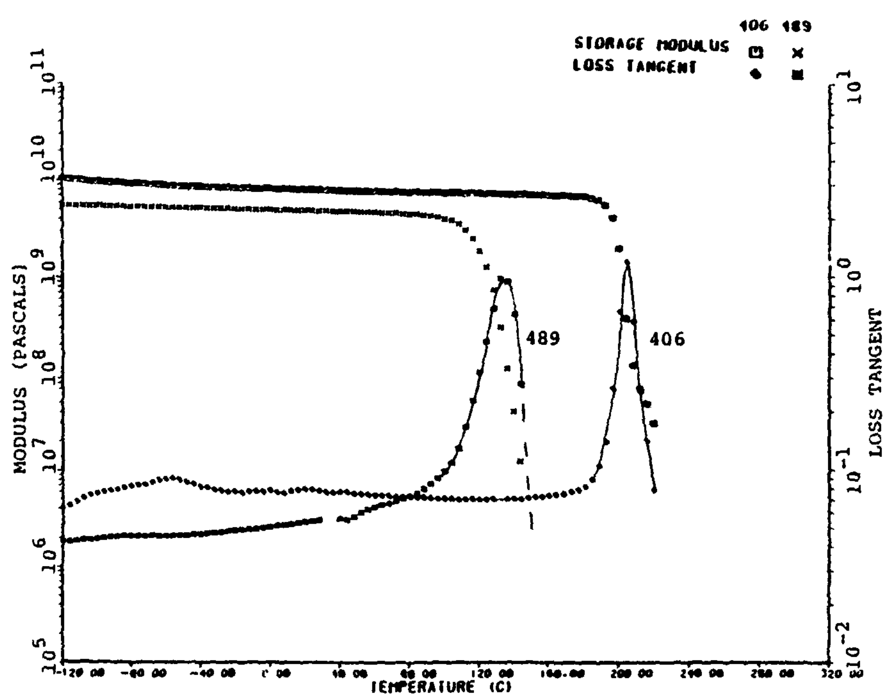


Figure 112. DMA Storage Modulus and Loss Tangent Data for P-1700 Polysulfone Filled with Platelet Graphite and Carbon Black; Run 489 with Plasticizer, Run 406 without Plasticizer.

SECTION VI

POLYMER BLENDING FOR EXTENDING DAMPING TEMPERATURE RANGES

1. POLYIMIDES - MELT BLENDING

As a part of the program, we also studied blending of selected polymers as a method for producing compositions with broad temperature range damping capabilities. It is well known that polyblending of two or more polymers that are semi-compatible, having a slight degree of immiscibility, will result in a material having a single broad damping dispersion in the temperature range between the T_g values of the pure polymers. In order for this to occur the polymers blended together must have similar structures and potentially interactive structural groups.

Three polyimides with similar structures and interactive structural groups were chosen for blending. These are Torlon 4000 (I), Ciba-Geigy XU218 (II), and Upjohn 2080 (III). Initial evaluations involved mixtures of I + II and I + III made by dispersing powdered components together prior to molding by a simple mechanical mixing procedure. The dispersed powders were then compression molded in the melt state. The DMA data for mixtures of I + II and I + III are shown in Figures 113 through 116. Each mixture has a bimodal glass transition loss dispersion with peak intensities relative to the proportion of I, II, or III present in the mixture. Thus the two components of each mixture are quite segregated and the T_g loss maximum value is considerably lower than that of either pure polymer.

Two other techniques for dispersing mixture components were considered as potential methods for realizing improved compatibility of the components. These were melt blending and solution blending.

Torlon 4000 (I) and Upjohn 2080 (III) have similar structures but T_g values that differ by 60°C. It was thought

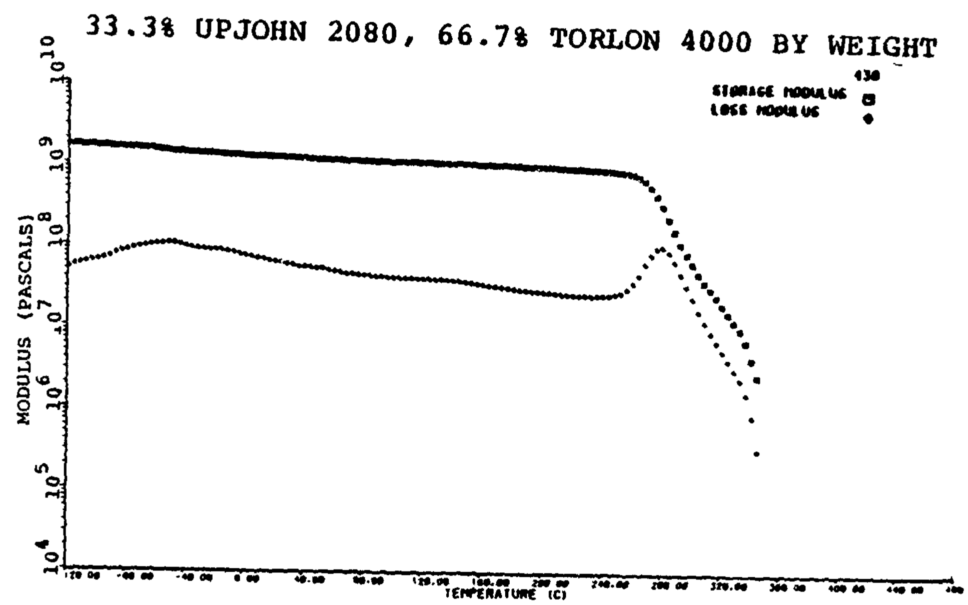


Figure 113. 33/67 Wt. Percent Mixture of Upjohn 2080 and Torlon 4000 Powder Mixed and Molded - DMA Storage and Loss Modulus Data.

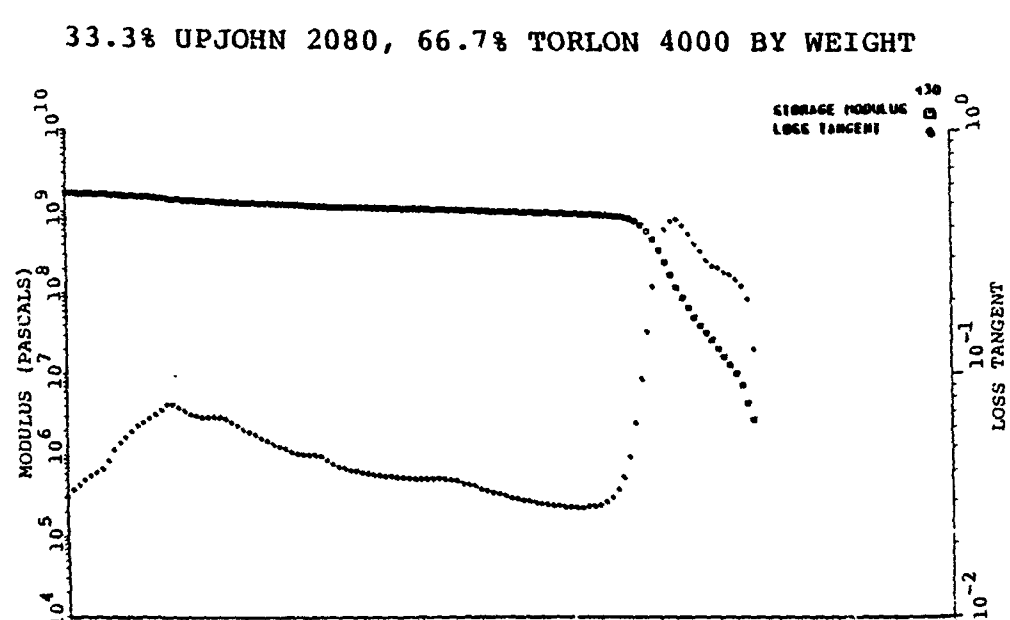


Figure 114. 33/67 Wt. Percent Mixture of Upjohn 2080 and Torlon 4000 Polymer Mixed and Molded - DMA Storage Modulus and Loss Tangent Data.

33.3% XU218; 66.7% 4000

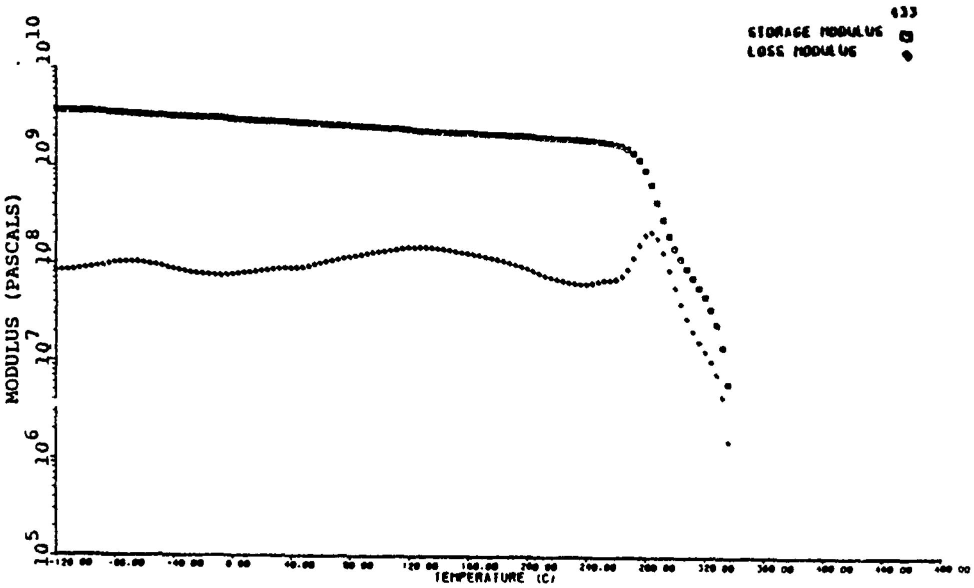


Figure 115. 33/67 Wt. Percent Mixture of XU 218 and Torlon 4000 Powder Mixed and Molded - DMA Storage and Loss Modulus Data.

33.3% XU218; 66.7% 4000

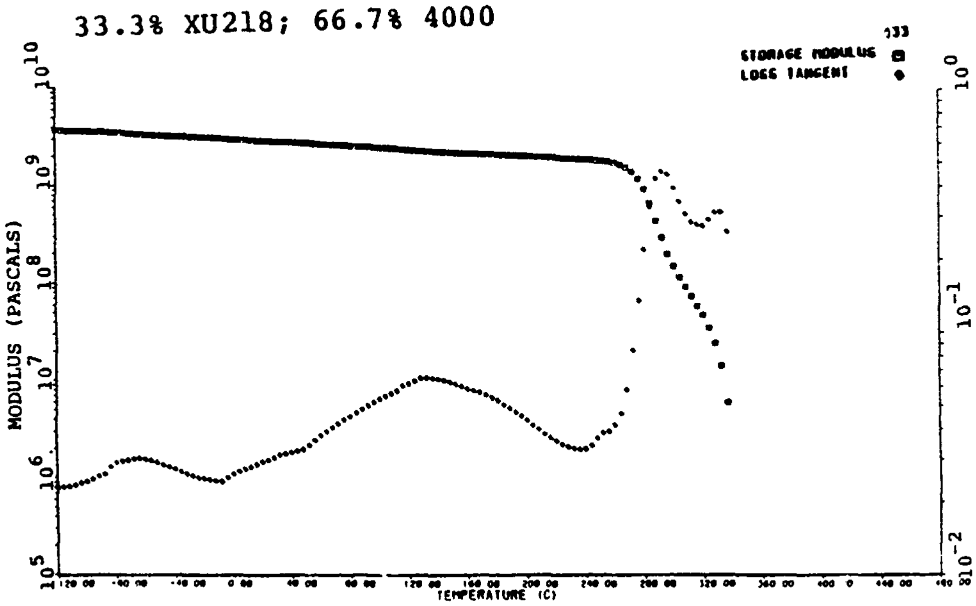


Figure 116. 33/67 Wt. Percent Mixture of XU 218 and Torlon 4000 Powder Mixed and Molded - DMA Storage Modulus and Loss Tangent Data.

that these two polymers might form compatible blends with a broad loss dispersion at T_g. The possibility for doing this was supported by some preliminary solvent blending experiments as discussed below. Beyond this we began melt blending the two polymers.

Some results of these studies are shown in Figures 117 and 118 which present Young's Modulus, loss modulus, and loss tangent (loss factor) data for a blend of Torlon/Upjohn (50/50 by weight) that was melt mixed in UDRI's Haake Rheocord Rheometer. The mixture data are compared with the data for the two pure polymers. It is apparent that the mixture has a loss tangent peak covering a broad range of temperatures between the T_g values of the two pure polymers. The loss tangent intensity at T_g of the mixture is of the same order as either of the two pure polymers. There does, however, appear to be a slight bi-modal contribution at high temperature. The glassy state loss factor and loss modulus values (at $T<T_g$) are greater than those for either of the original polymers. This suggests that compatible polyblends of two polyimide type materials may lead to new broad temperature range damping compositions that function at temperatures in excess of 300°C, particularly if a greater degree of mixing were achieved.

Figure 119 shows DMA data comparing dynamic mechanical properties for powder blended, melt blended, and solution blended mixtures of I and III. Both the melt blended and solution blended samples have broad damping peaks with the solution blended sample covering the widest temperature range. The solution blended sample was prepared by dissolving a 50%/50% by wt. mixture of I and III in DMF solvent at a total concentration of 10% by wt. The excess solvent was then evaporated and the resulting film sample was evacuated for seven days at 35μ to remove residual solvent.

The extent of the damping peak broadening in the solvent blended formulation cited above prompted further study of

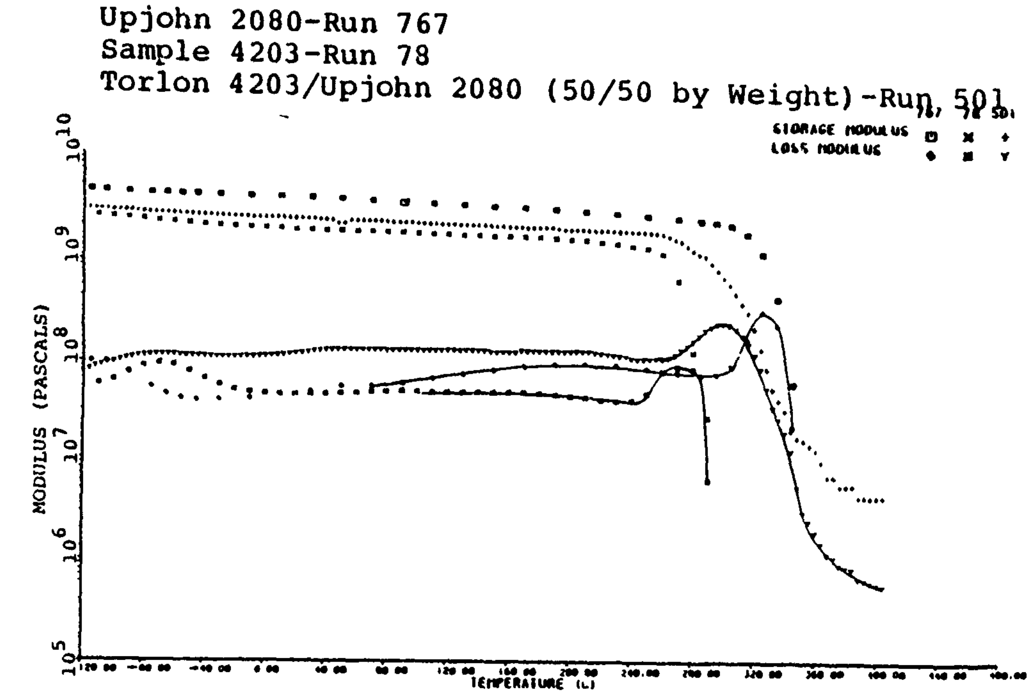


Figure 117. DMA Storage and Loss Moduli Data for Torlon/Upjohn Polyimide Melt Blend (Run 501) Compared to Data for the Original Polymers.

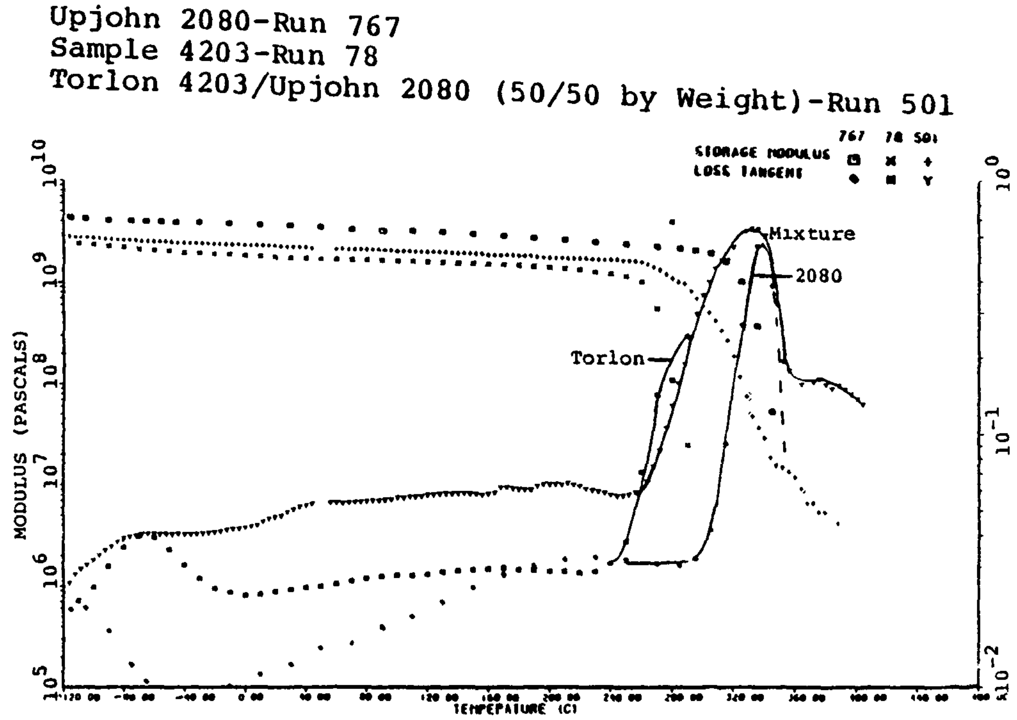


Figure 118. DMA Storage Modulus and Loss Tangent Data for Torlon/Upjohn Polyimide Melt Blend (Run 501) Compared to Data for the Original Polymers.

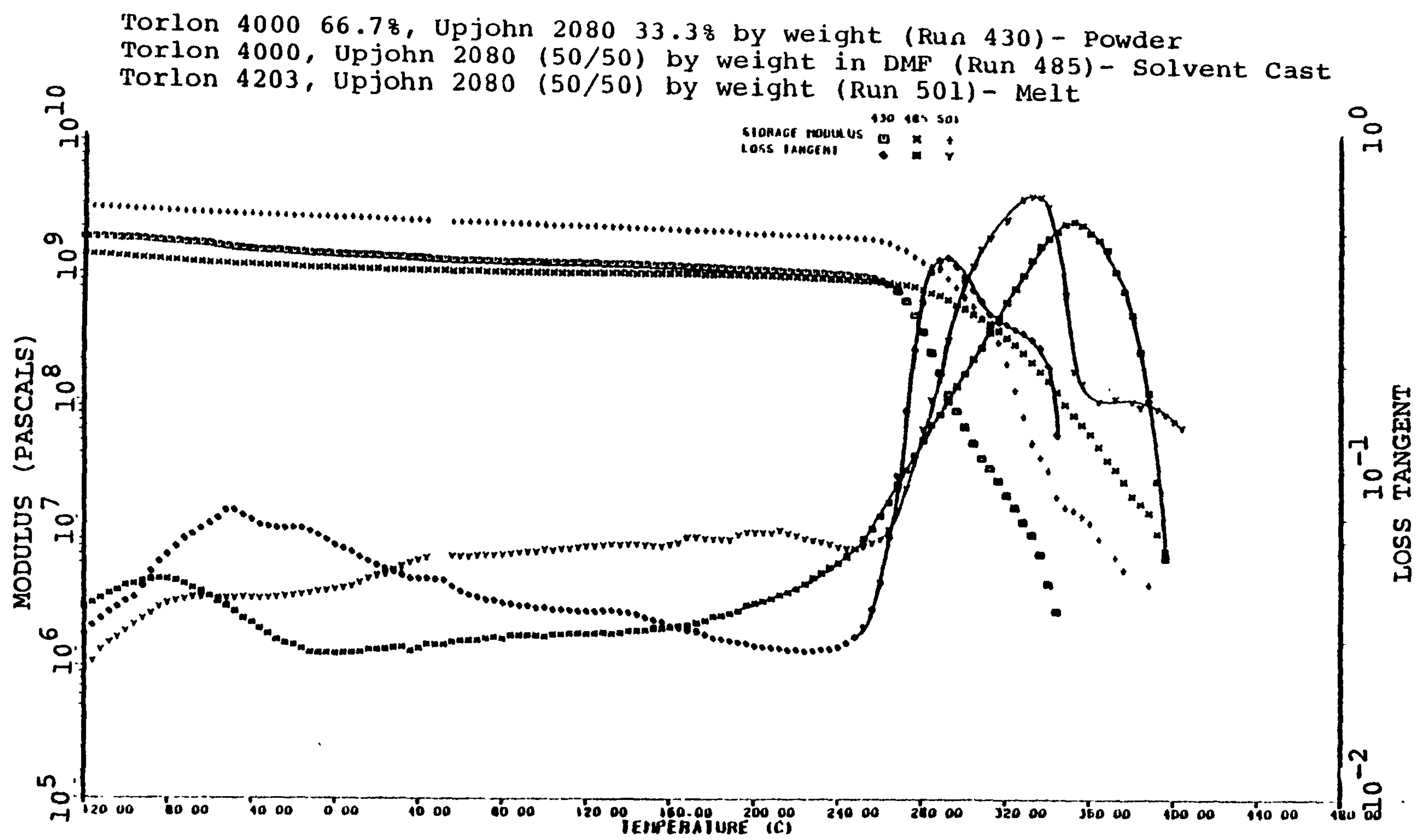


Figure 119. Comparison of DMA Curves for Powder Mix, Melt Blend, and Solvent Cast Mixtures of Upjohn 2080 and Torlon 4000.

solvent blending as a method for producing broad damping polyimide compositions as discussed in the following paragraph.

2. POLYIMIDES - SOLUTION BLENDING

Several polyimide mixtures of polymers I, II, and III were prepared by solution blending the components in DMF solvent in concentrations of 5 to 10% by weight. The polymer was then precipitated from solution dropwise into methanol, isolated, and vacuum dried to remove residual DMF. The mixtures are summarized as follows:

	Weight %		
Sample	I (Torlon)	II (XU 218)	III (Upjohn 2080)
1	75	0	25
2	25	0	75
3	75	25	0
4	50	50	0
5	25	75	0
6	60	20	20

DMA bars were molded from each sample and dynamic mechanical property data were recorded. These data are presented in summary form in Figures 120 through 125. In Figure 120 the data for mixtures of I and II indicate by loss tangent intensity and peak width that mixture 5 of I in II is more compatible (narrow peak, high intensity) than are mixtures 4 (50/50) and 3 (mixture of II in I). The peak broadening observed results directly from somewhat limited compatibility and is desirable in terms of broad range damping capability. The loss peaks for each of the mixtures fall between those of the pure components I and II so that all five materials taken together provide effective damping capability over the broad temperature range of 270-370°C.

In Figures 122 through 125 we note that mixture 6 containing amounts of I, II, and III and mixtures 1 and 2 containing I and III also are compatible but have broader damping peaks

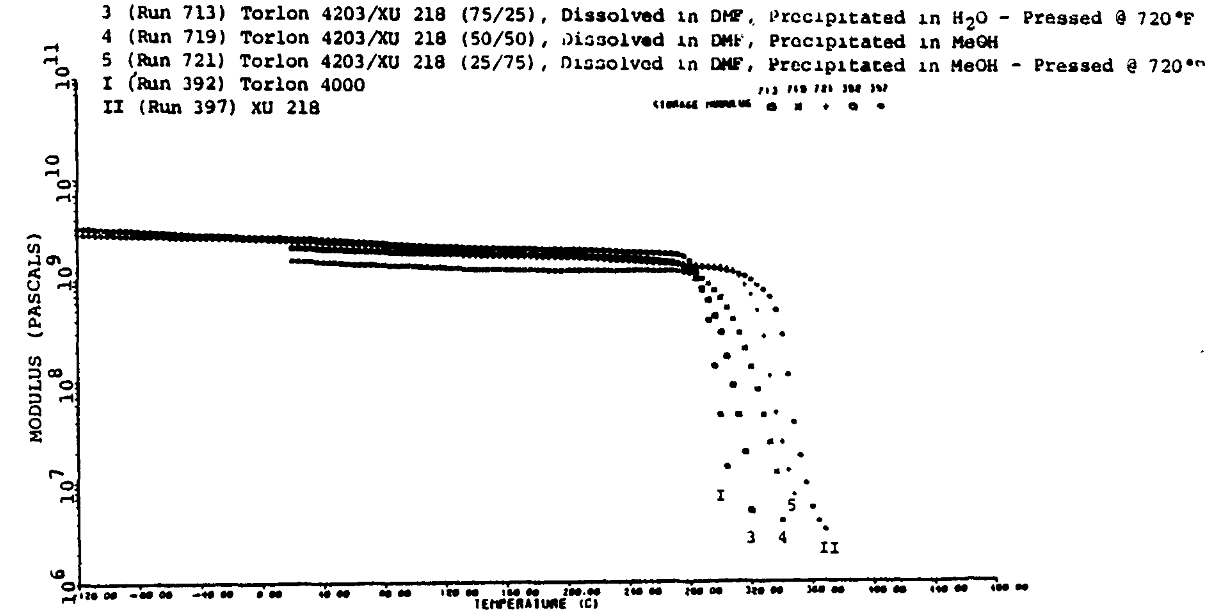


Figure 120. Comparison of DMA Storage Modulus Curves for Torlon 4000 (I) and XU 218 (II) Mixtures (Solvent Blended and Precipitated from Solution) Along with Data for Original Polymers.

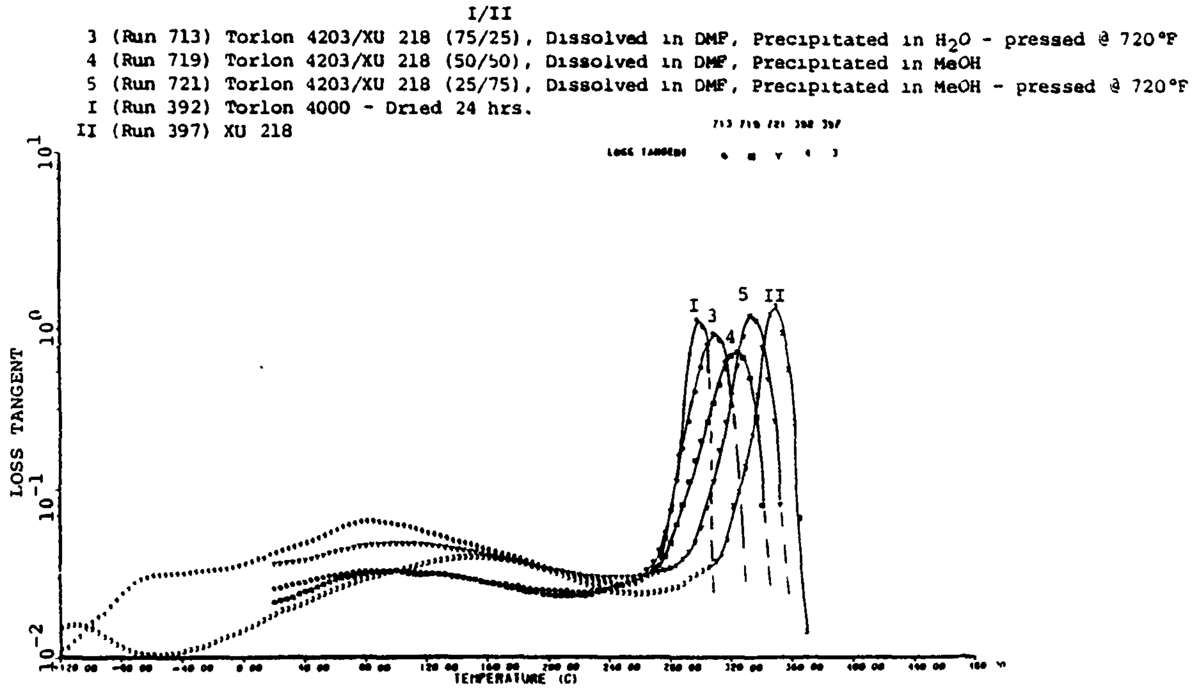


Figure 121. Comparison of DMA Damping Curves for Torlon 4000 (I) and XU 218 (II) Mixtures (Solvent Blended and Precipitated from Solution) Along with Data for Original Polymers.

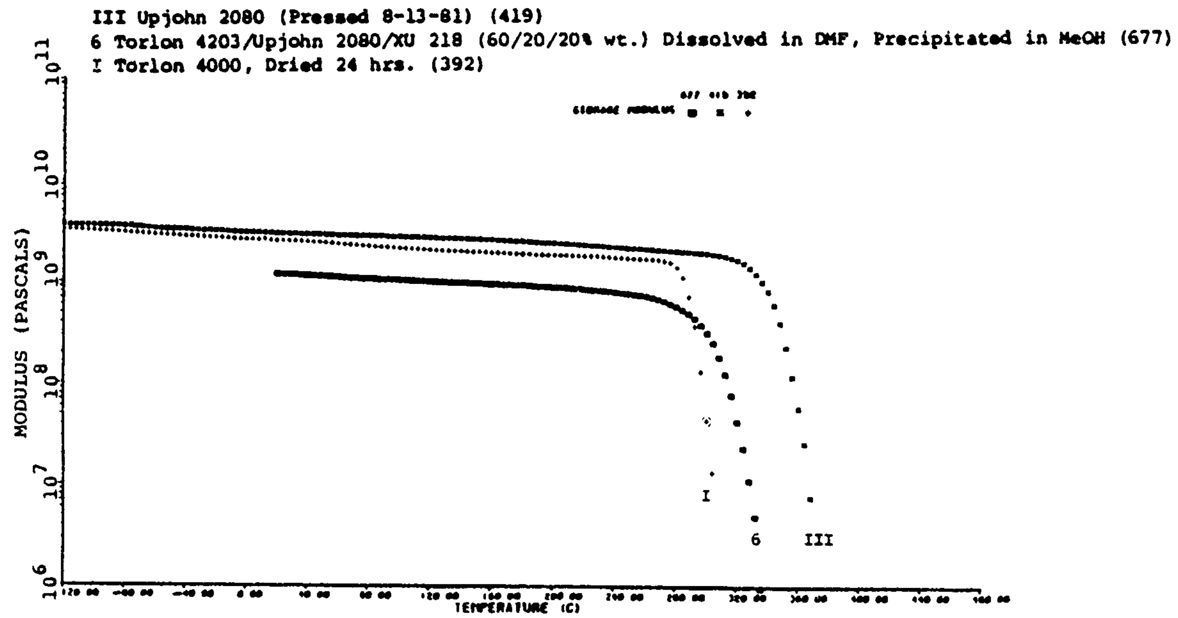


Figure 122. DMA Storage Modulus Curve for Ternary Mixture of Torlon 4000, XU 218, and Upjohn 2080 (Solution Blended) Compared to Torlon and Upjohn Curves.

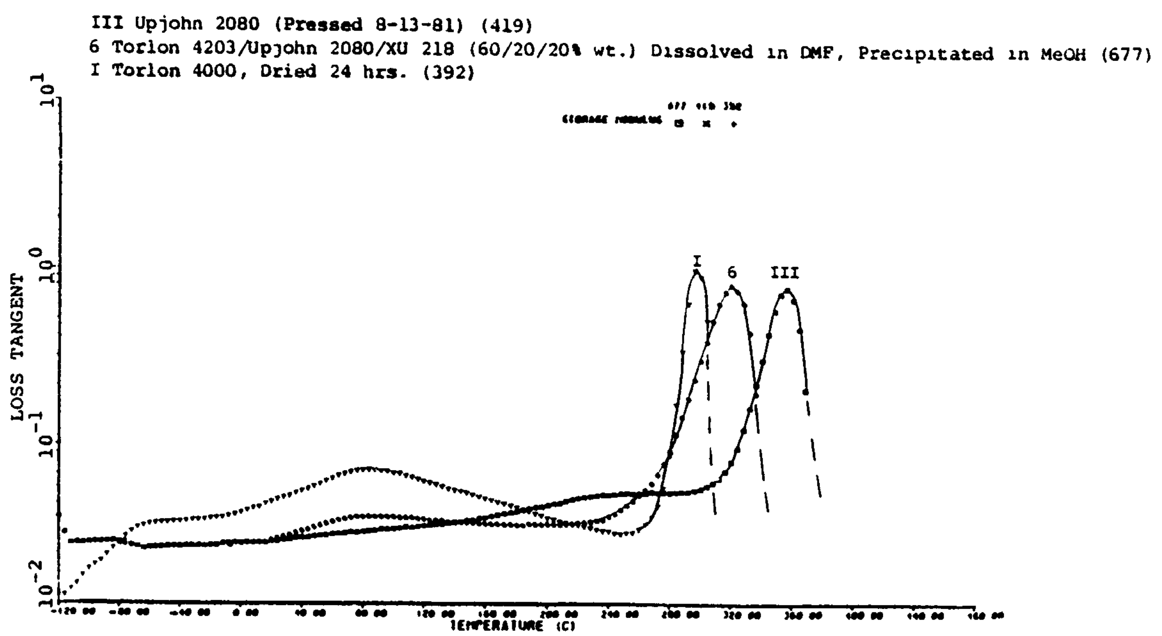


Figure 123. DMA Damping Curve for Ternary Mixture of Torlon 4000, XU 218 and Upjohn 2080 (Solution Blended) Compared to Torlon and Upjohn Curves.

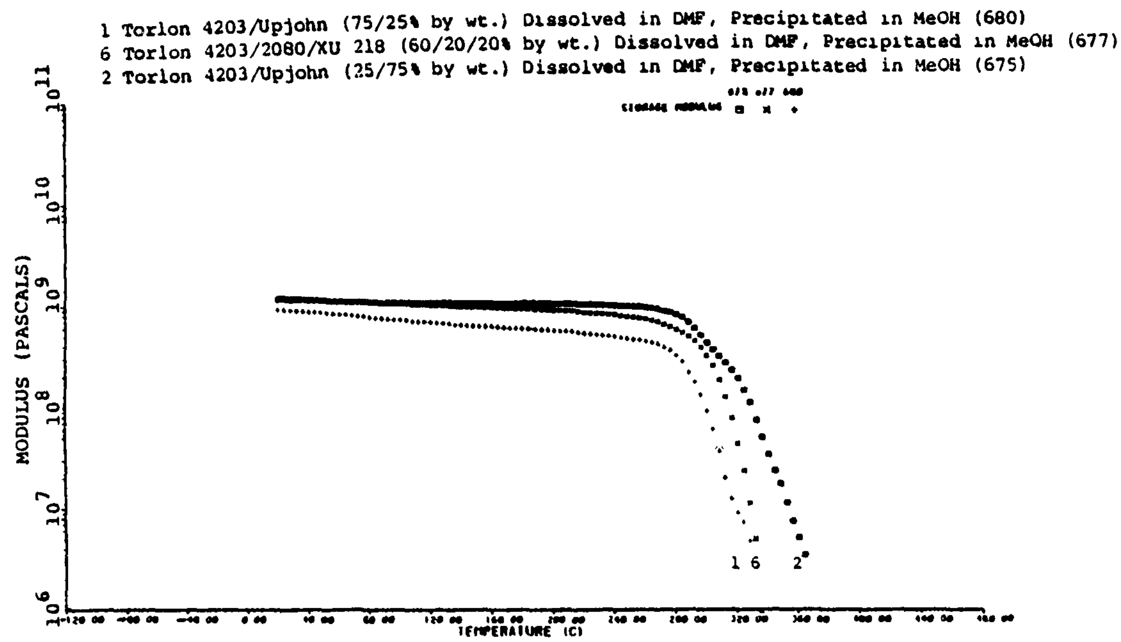


Figure 124. DMA Storage Modulus Curves for Polyimide Blends of Figure 125.

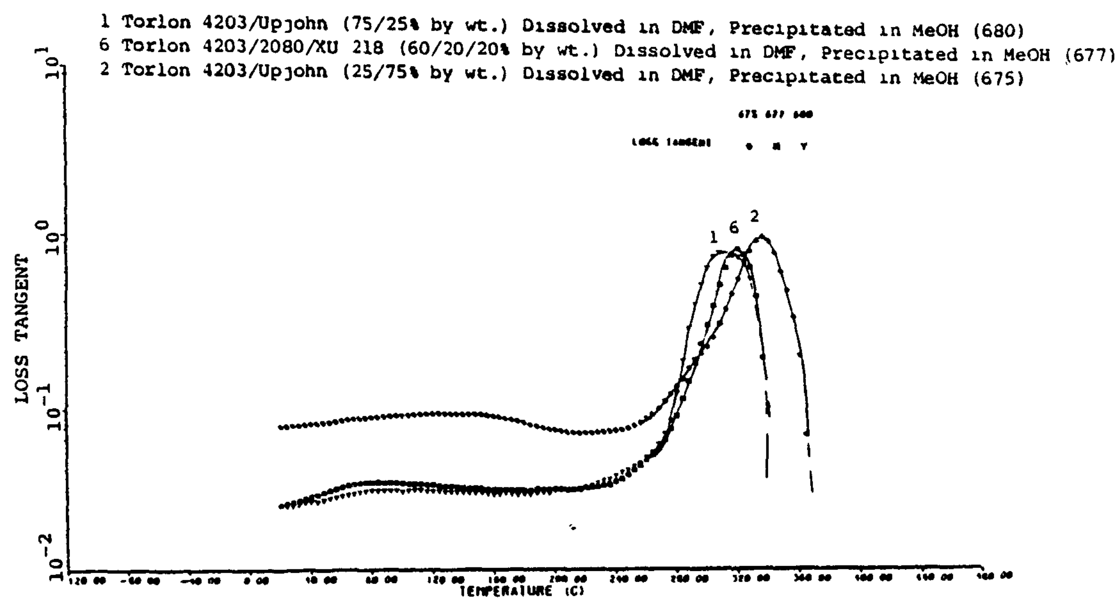


Figure 125. DMA Damping Curves for Three Polyimide Blends Prepared by Solution and Precipitation. Three materials cover a damping range similar to five materials in Figure 121.

than those of the pure polymers I and III. By combining the damping responses of samples 1, 6, and 2 as shown in Figure 125 we have uniform high intensity damping over the range from 270-370°C because of the overlap in the damping ranges of the individual materials. In designing damping treatments it should be possible to incorporate these various materials to take advantage of the extended temperature range of damping provided by combinations similar to those described here.

3. POLYSULFONES - SOLUTION BLENDING

Preliminary studies of solution mixing two polysulfones, P-1800 and 200P, demonstrate that such materials are inherently incompatible. This result arises, even though the two polymers have similar structures, because there are no strongly interacting chemical groups in either system.

In Figure 126 loss tangent data for two blends indicate two distinct loss maxima. The 10/90 mixture was prepared by mixing solutions of each polymer in methylene chloride. When mixed the two polymers immediately precipitate from solution. If the two are mixed in a better solvent, DMF, (as in the case of the 25/75 mixture) and then precipitated by addition of water, somewhat better mixing is achieved. This is evident in the slight shift of individual T_g loss peaks so that each is closer in temperature.

Additional experiments on mixing by precipitating very small droplets of polysulfone blends from solution may lead to better results than those indicated here. Further work on this will be considered in future studies.

P1800/200P (10/90% by wt.) (587) Mixed in $CHCl_2$
P1800/200P (25/75% by wt.) Dissolved in DMF, Precipitated in H_2O (672)

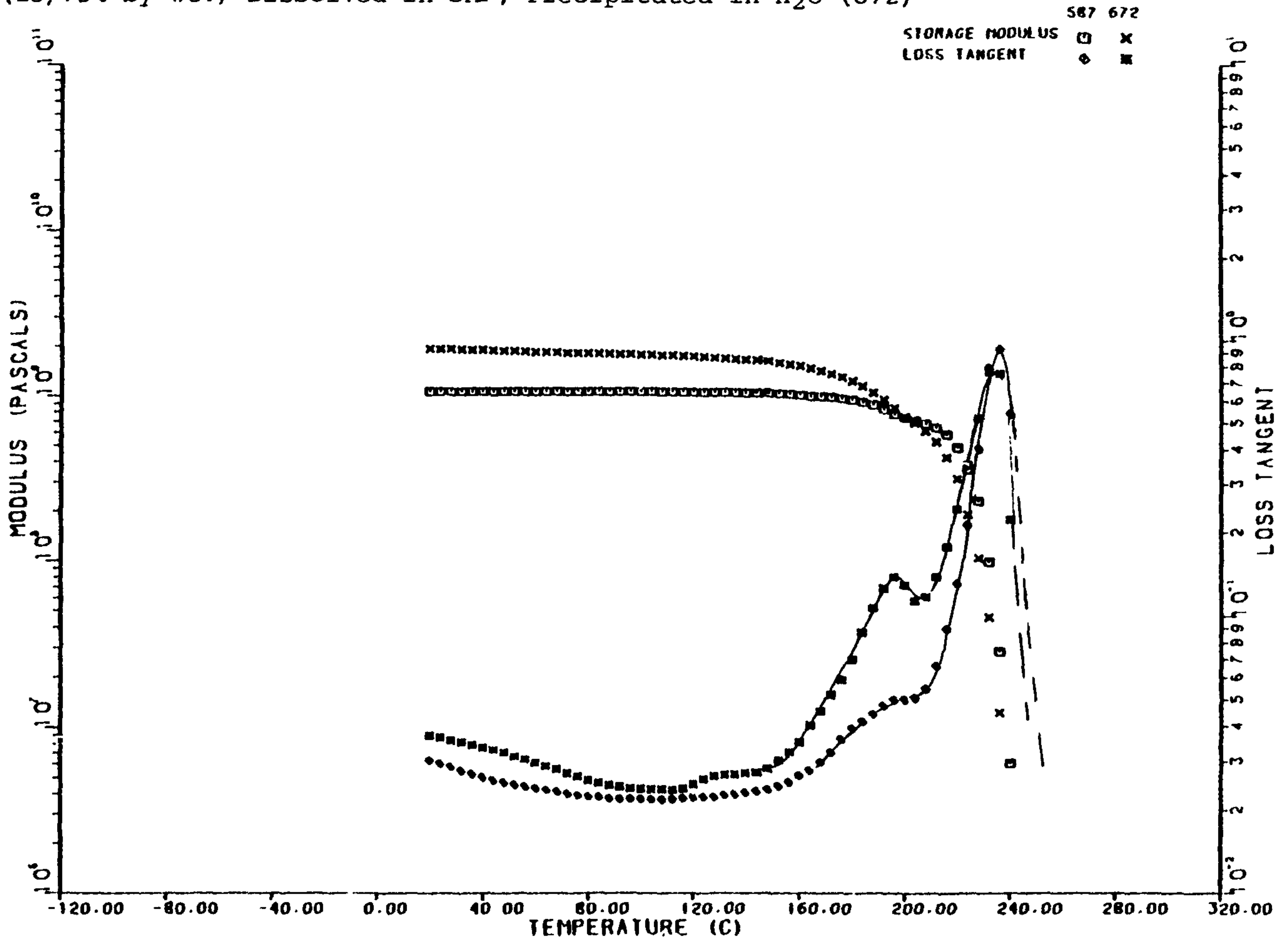


Figure 126. Comparison of Damping Curves for Two Blends of P-1800 and 200P Polysulfones; Sample 587 Blended and Precipitated in Methylene Chloride, Sample 672 Blended in DMF and Precipitated in Water.

SECTION VII

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions in summary form are drawn from the information obtained in the program:

(1) The T_g values of polymers in a particular class are changed significantly by structural modification; relaxations below T_g are also affected.

(2) Peak damping intensity and breadth of the damping peak temperature range are not affected greatly by chain structure modifications.

(3) Crosslinking reduces peak damping, broadens the damping peak temperature range, and usually makes the material more brittle.

(4) Fillers modify the damping intensity at T_g and below T_g; the exact processing conditions for introducing a filler are important in determining the extent of modification.

(5) Platelet graphite in combination with a nominal amount of carbon black functions as a synergistic filler system for improving the damping performance of the rigid polymers of interest in this project. This filler system broadens the peak damping temperature range and appreciably increases damping in the glassy state; the glassy state Young's and loss moduli are also increased.

(6) Certain of the polyimides and polysulfones studied have a wide temperature span between T_g and the TGA decomposition point T_d. This indicates that these polymers probably are the best candidates for damping applications where superior thermal stability is required. In terms of damping property stability and retention polysulfones are

superior to polyimides when exposed for long times in air at 300°C. The overall thermal stability of these materials in a constrained layer damping system will be improved because of the exclusion of oxygen.

(7) Altering the damping temperature range of a given high temperature polymer or polymer formulation can be achieved by blending a thermally stable nonvolatile plasticizer into the polymer. By this means a single polymer can be formulated to damp effectively at various temperatures other than the normal T_g range.

(8) With judicious use of additives (fillers and plasticizers) the properties of a given polymer including T_g, storage modulus, and loss modulus can be adjusted to optimize values required for a specialized high temperature damping application.

(9) Broad damping range materials can be prepared by polyblending two or more polyimides with similar chain structures. The mixtures will have an effective damping range within the span between the T_g's of the original polymers. The peak damping intensity of the blend is similar to that of each of the component polymers, while glassy state $T<T_g$ damping is improved for the mixture. Each mixture has a broader T_g range than the original polymers.

(10) A number of polymers and polymer formulations have been identified that have the potential for effective vibration damping within the temperature range 300°F (149°C) to 700°F (371°C). While a specific material might be effective in applications over a limited temperature range, a broad temperature range might be covered by using more than one material in a layered damping treatment.

Further work on high temperature damping polymers is recommended in the following areas:

(1) Procedures for applying candidate damping polymers to typical surfaces for damping treatment should be studied thoroughly. This study should include bonding and adhesion of the resin, preparation of surfaces, and application techniques.

(2) Methods for minimizing resin thermal expansion and contraction and possible debonding that might result should be considered in detail. These might include polymer thickness effects, geometry of damping configuration, incorporation of negative coefficient of thermal expansion fillers into the polymer, or integrally incorporating the polymer into the structure.

(3) Long term thermal and thermo-oxidative stability of candidate polymers should be evaluated in a constrained layer configuration or integral damping configurations where oxygen is not in contact with the polymer.

(4) Suitable aircraft engine structural components in need of damping treatment should be tested with polymeric treatments of the type considered in this program. Only by carrying out such tests will the potential utility of these materials be determined.

APPENDIX A

CRITICAL EVALUATION OF THE DMA MEASUREMENT TECHNIQUE

1. TEMPERATURE CALIBRATION OF THE 981 DMA INSTRUMENT

A thorough temperature calibration of the DMA was carried out over a broad temperature range to verify the exactness of the temperatures recorded for viscoelastic property measurements. To do this several samples of different materials with known melting/glass transition temperatures were tested on the DMA. The results are listed in Table A-1 and plotted in Figure A-1. It is apparent that excellent agreement between actual and recorded temperatures is achieved using the UDRI technique for operating DMA.

The thorough calibration procedure suggested here normally is supplemented by a shortened procedure where a single reference standard or two standards are tested every few days. to verify the recorded instrument temperature scale. In previous experiments this has been determined to be sufficient to maintain accurate temperature readings in each viscoelastic material test. The linearity of the calibration is verified by the data in Table A-1 and Figure A-1.

2. COMPARISON OF DMA DATA WITH THOSE FROM OTHER INSTRUMENTS

When the temperature calibration procedure described above is used in conjunction with a heating rate of 2°C per minute, the DMA sample temperatures exactly match those read from the instrument recorder. This has been verified by direct measurements of sample temperatures and by comparing DMA data with those taken by other dynamic mechanical instruments.

In Figures A-2 through A-4 are examples of data for three polymers where UDRI DMA data are compared on nomograph plots with comparable data from the vibrating beam and Rheovibron instruments. In each case, Butyl 268, Fluorosilicone LS-63, and polymethylmethacrylate, the agreement is quite good.

TABLE A-1

DMA CALIBRATION TEMPERATURE VALUES

Sample	Measured Temperature (°C)	Theoretical Temperature (°C)	Difference
Water	-1	0	1
PMMA	114	113	1
Indium	159	157	2
Tin	233	232	1
Lead	328	327	1
Zinc	420	419	1

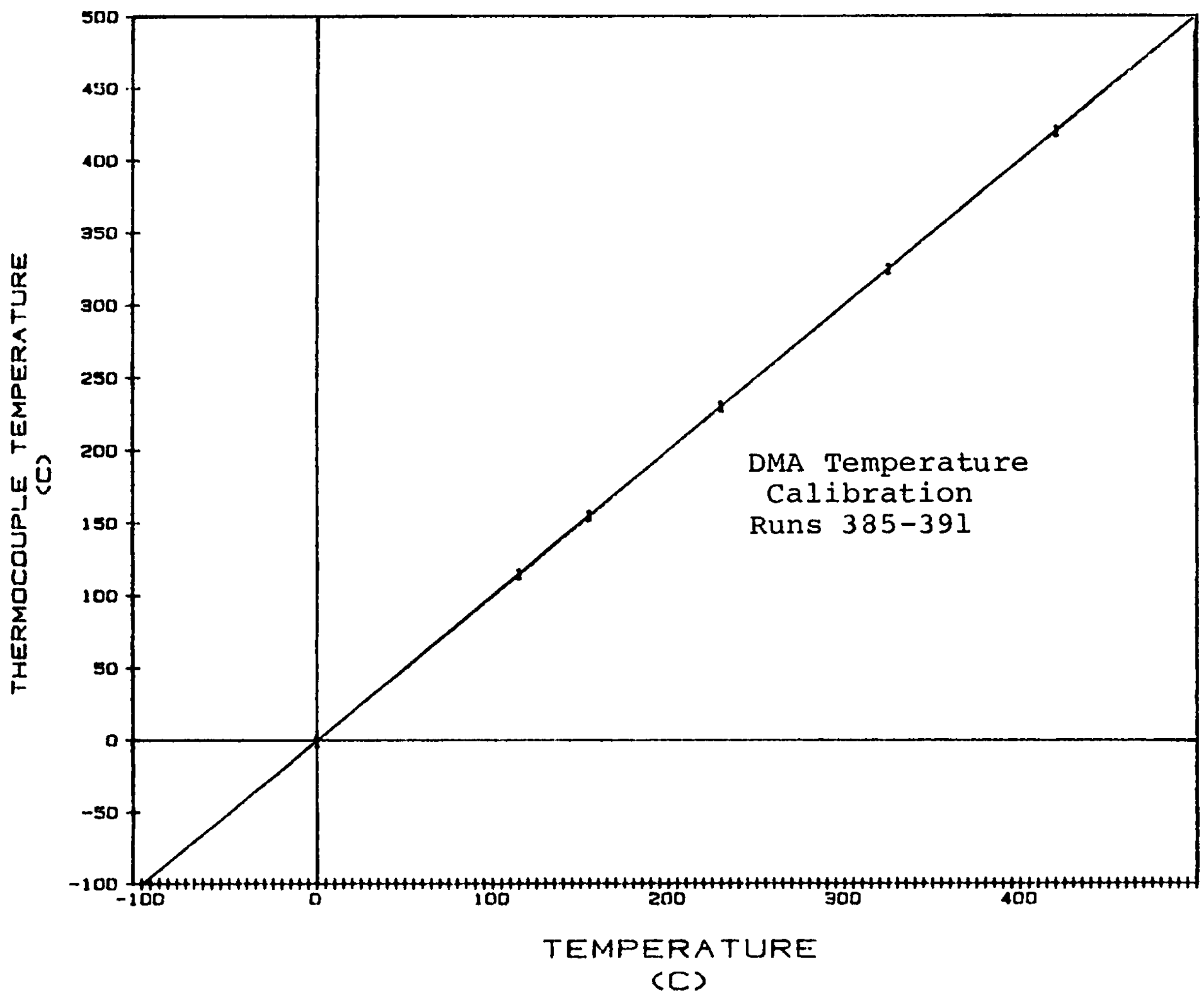


Figure A-1. DMA Calibration Curve; Sample Thermocouple Reading vs. Calibration Sample Transition Temperatures.

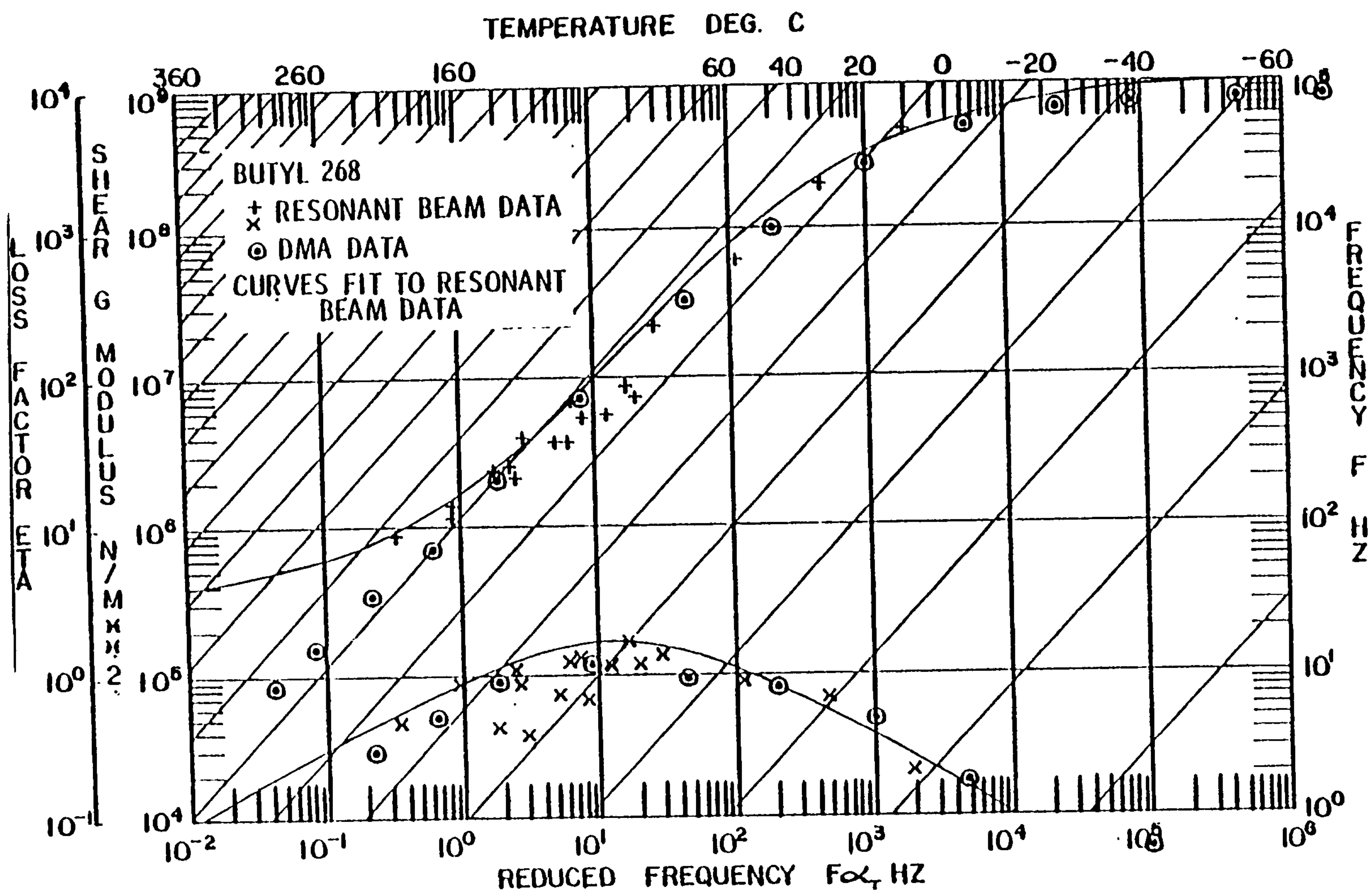


Figure A-2. Reduced-Temperature Nomogram for a Butyl 268 Rubber Compound.

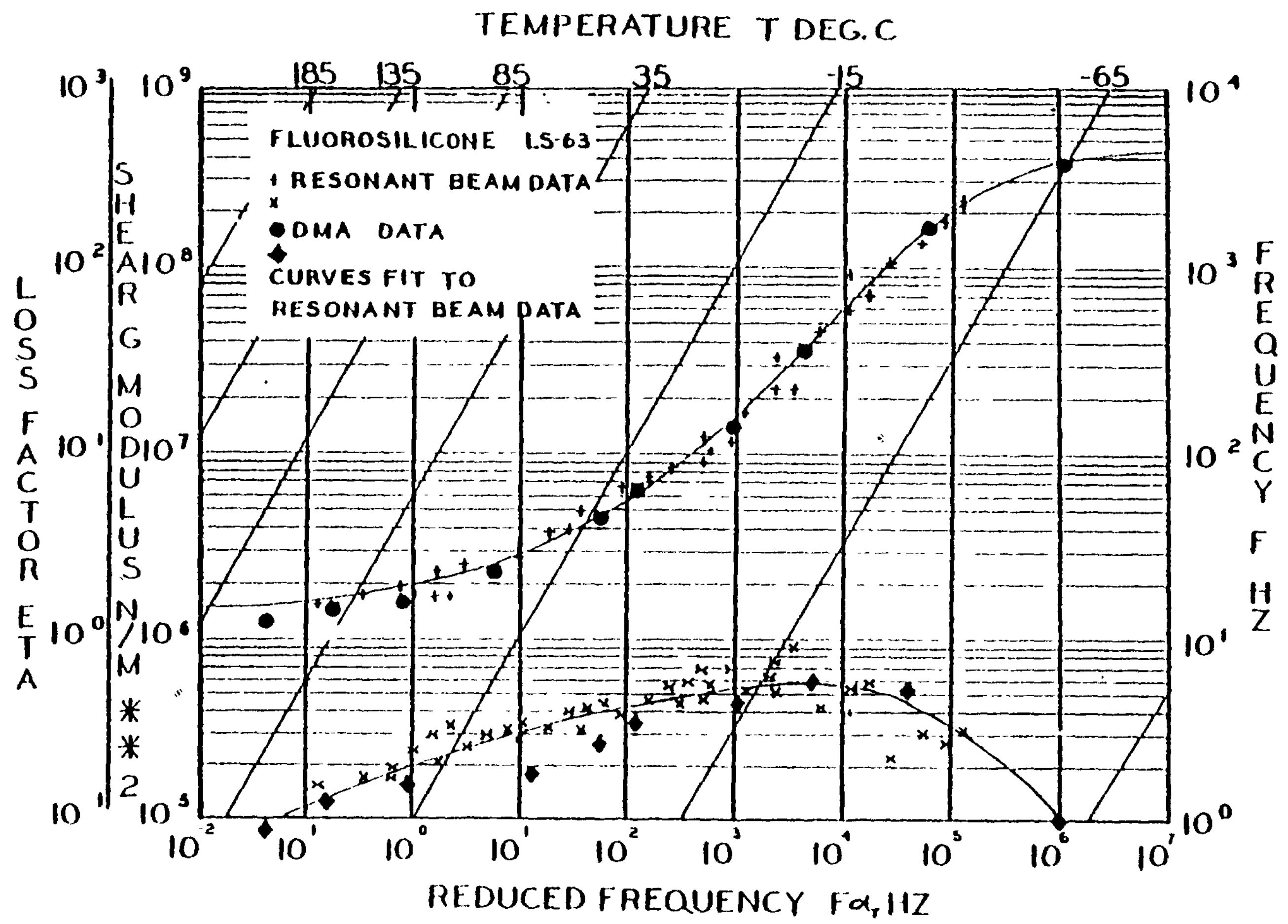


Figure A-3. Reduced-Temperature Nomogram for Unfilled Fluorosilicone LS-63 Elastomer.

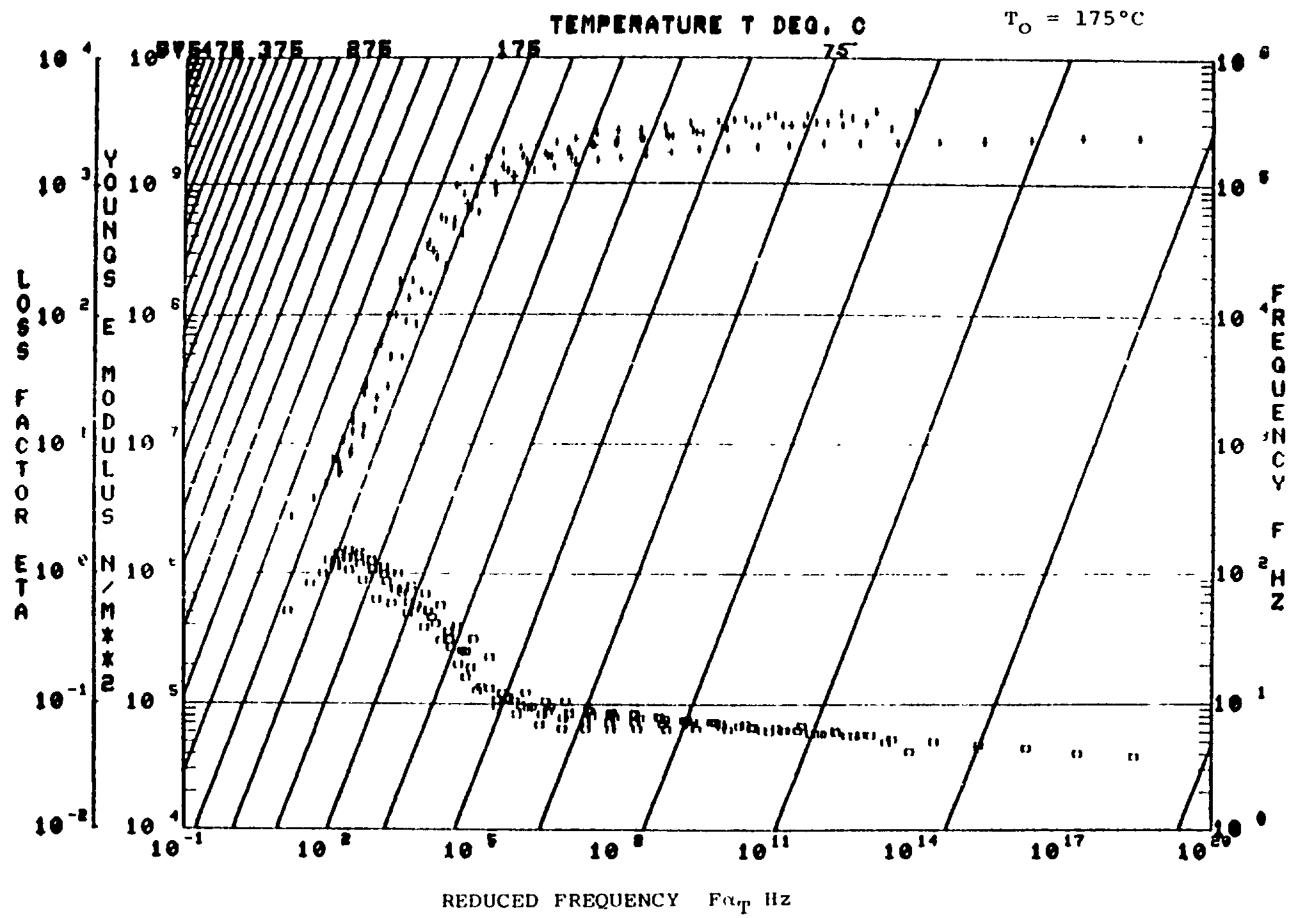


Figure A-4. Reduced-Temperature Nomogram for Standard Polymethylmethacrylate; DMA and Rheovibron Data (3.5, 11, 35, 110 Hz) Combined.

APPENDIX B

EFFECT OF STRAIN AMPLITUDE ON DYNAMIC MECHANICAL PROPERTIES

The viscoelastic data generated during this program using the DMA test were determined for small amplitude oscillations as shown in the schematic diagram of Figure B-1. Typical strain amplitudes for DMA are on the order of 0.002 in/in or 0.2%. This deformation is considered to be well within the linear viscoelastic range. This assumption was checked by running tests on selected samples at various strain amplitudes.

The first series of tests conducted to confirm that the DMA measurements reported for this project are indeed well within the linear viscoelastic range were carried out with polymethylmethacrylate (PMMA), a typical glassy (amorphous) polymer, with a T_g value of 120°C. This was the material selected for the study because of its ease of characterization (relatively low T_g value). The dynamic mechanical properties, Young's Modulus, loss modulus, and loss factor (loss tangent) were measured by DMA at various oscillation amplitudes ranging from 0.1 mm to 1 mm. These data are plotted together in Figures B-2 to B-5.

Each set of data is identical indicating that within this deformation range the properties of a typical amorphous polymer are independent of strain magnitude. As a matter of practice all of the measurements for this project have been taken at strain amplitudes of 0.1 to 0.2 mm. The strains involved are of the order 0.1%, a very small value. In order to insure that nonlinearities are not present in the case of filled polymers of interest, similar measurements were performed on a typical filled polymer formulation.

Butyl 1066 polyisobutylene filled with 68 phr platelet graphite and 2.5 phr carbon black and lightly crosslinked was studied by DMA at various amplitudes ranging from 0.1 mm to 0.5 mm. Again this material was selected because its T_g value

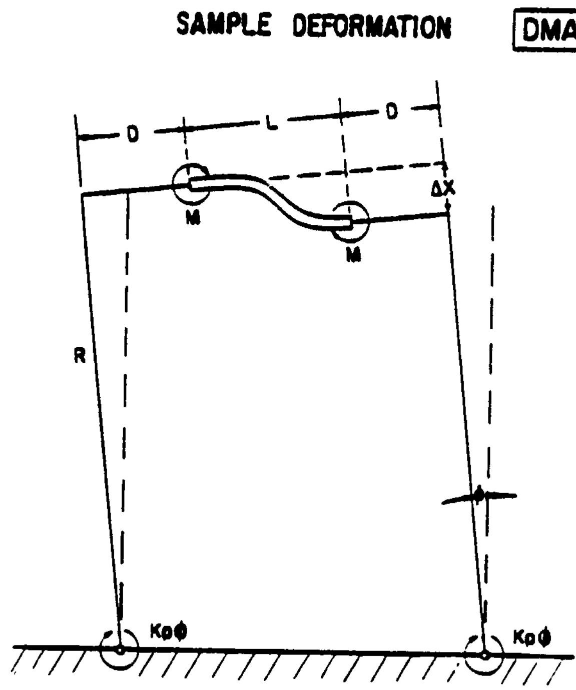


Figure B-1. Schematic of Sample Deformation Geometry Used to Determine Strain Magnitude for a DMA Test.

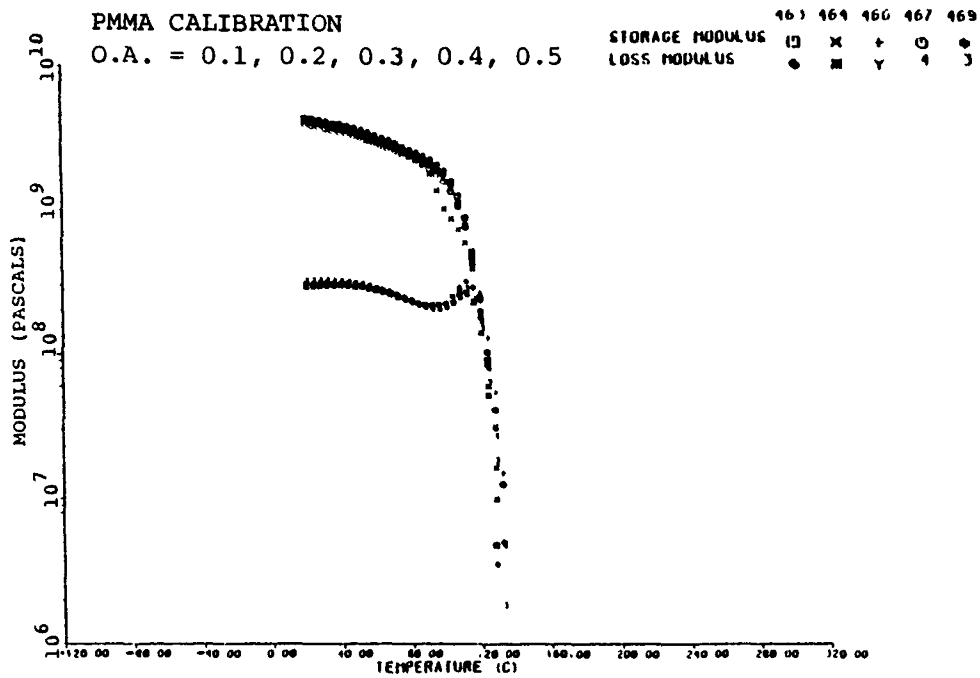


Figure B-2. DMA Data for Polymethylmethacrylate Taken at Various Strain Amplitudes 0.1 to 0.5 mm, Storage and Loss Moduli.

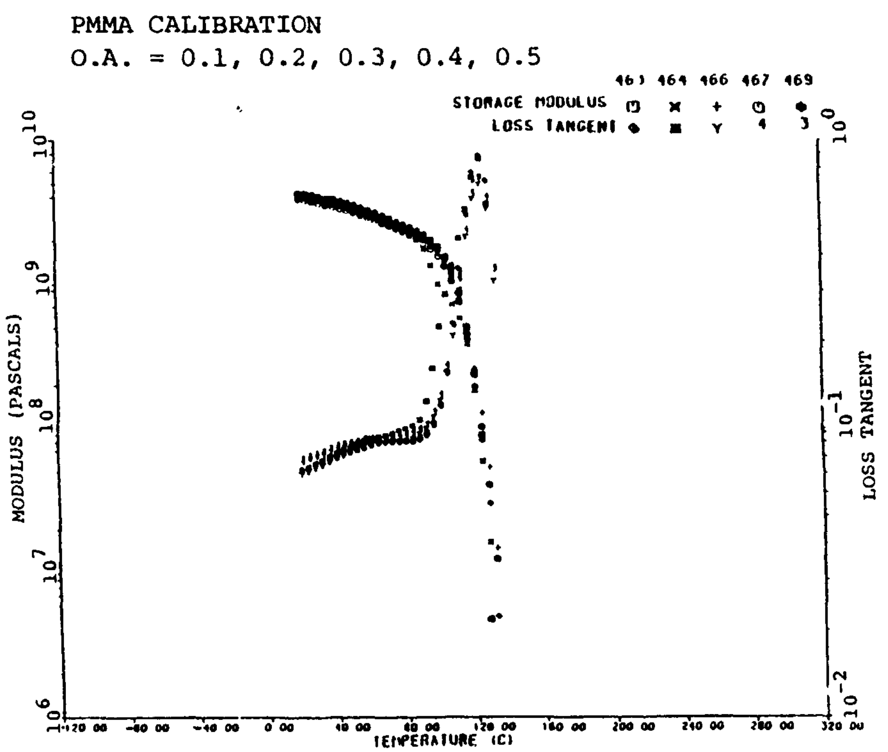


Figure B-3. DMA Data for Polymethylmethacrylate Taken at Various Strain Amplitudes 0.1 to 0.5 mm, Storage Modulus and Loss Tangent.

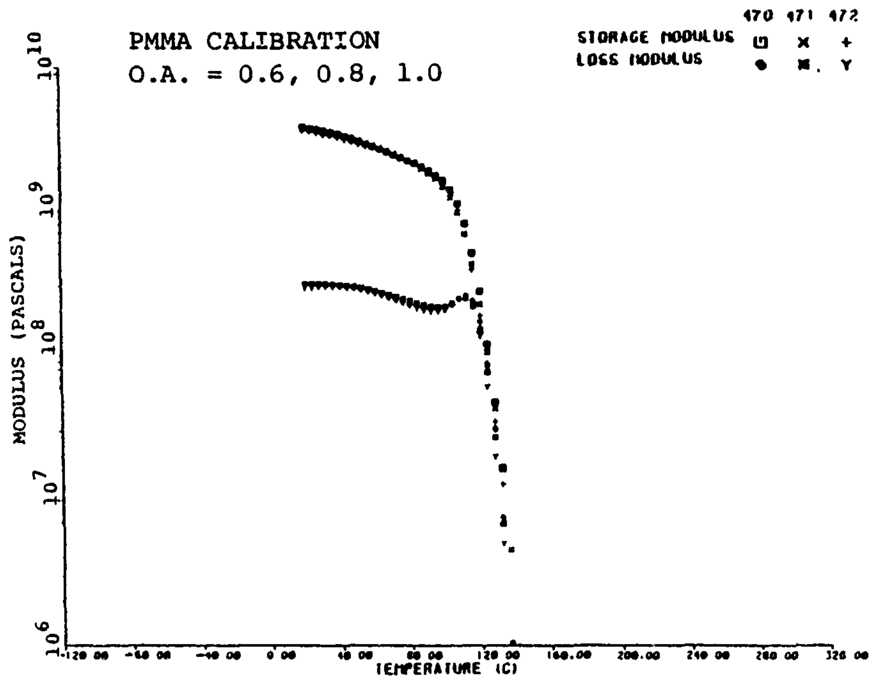


Figure B-4. DMA Data for Polymethylmethacrylate Taken at Various Strain Amplitudes 0.6 to 1.0 mm, Storage and Loss Moduli.

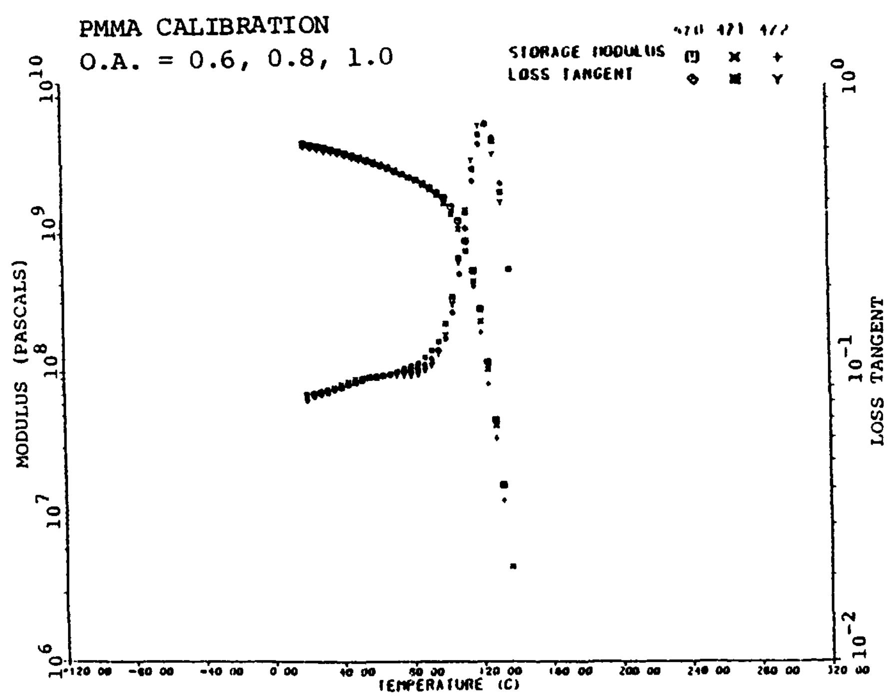


Figure B-5. DMA Data for Polymethylmethacrylate Taken at Various Strain Amplitudes 0.6 to 1.0 mm, Storage Modulus and Loss Tangent.

is low and repetitive DMA measurements for it could be made in a shorter time than for polymers with high T_g values. The data of Figures B-6 and B-7 demonstrate that within experimental error the DMA curves are similar for the filled polymer at different amplitudes.

Additional DMA data on a filled glassy polymer were taken for PMMA containing 33% by volume of platelet graphite and 1.5% by weight carbon black. These data shown in Figures B-8 and B-9 are identical at oscillating amplitudes up to 0.3 mm.

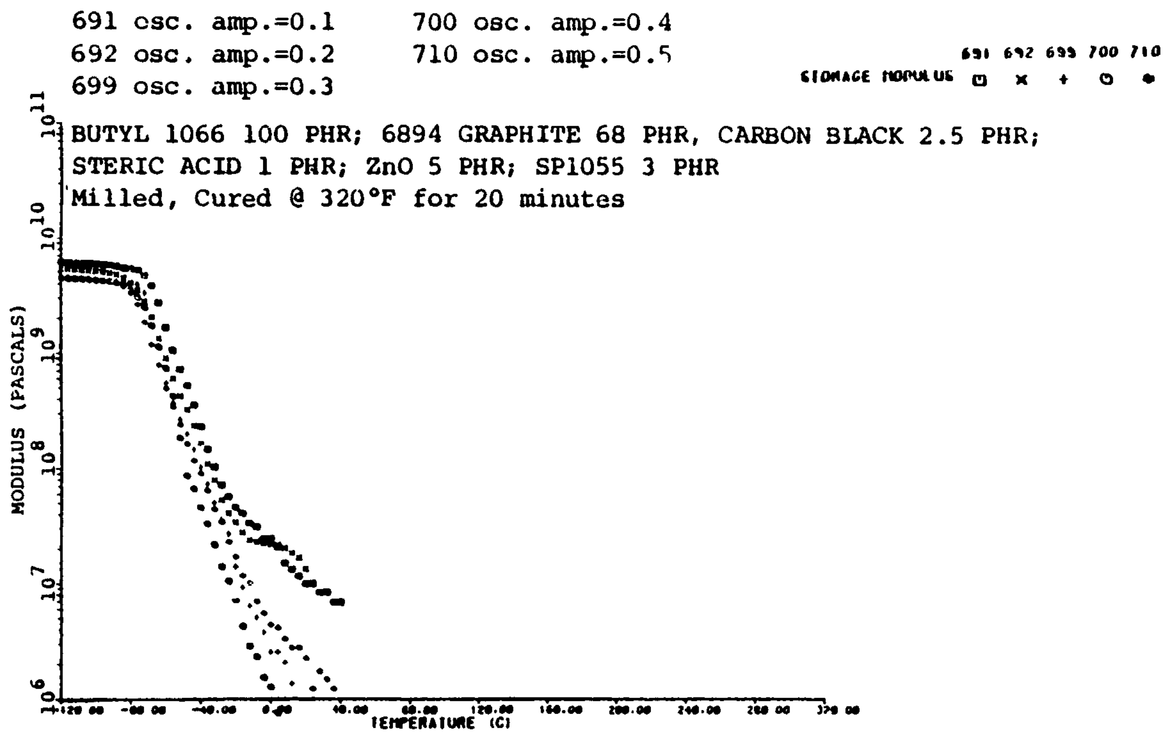


Figure B-6. Graphite Filled Butyl 1066 DMA Storage Modulus Data Taken at Various Amplitude Levels.

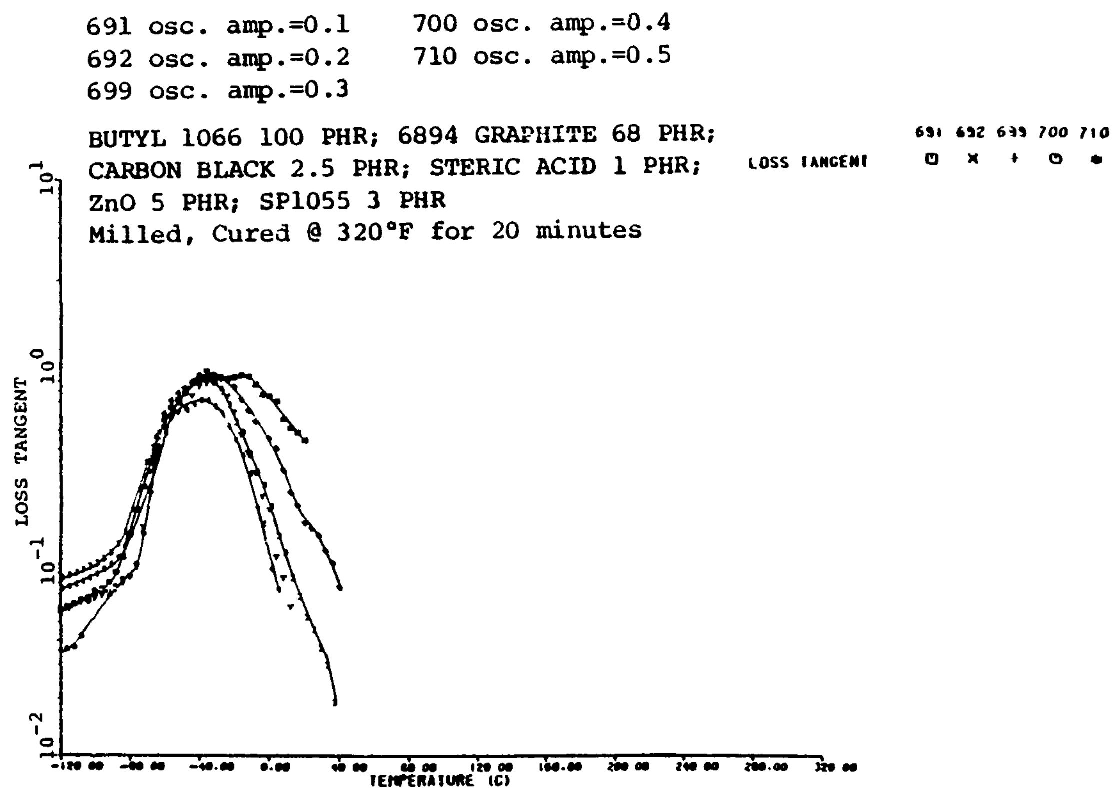


Figure B-7. Graphite Filled Butyl 1066 DMA Loss Tangent Data Taken at Various Amplitude Levels.

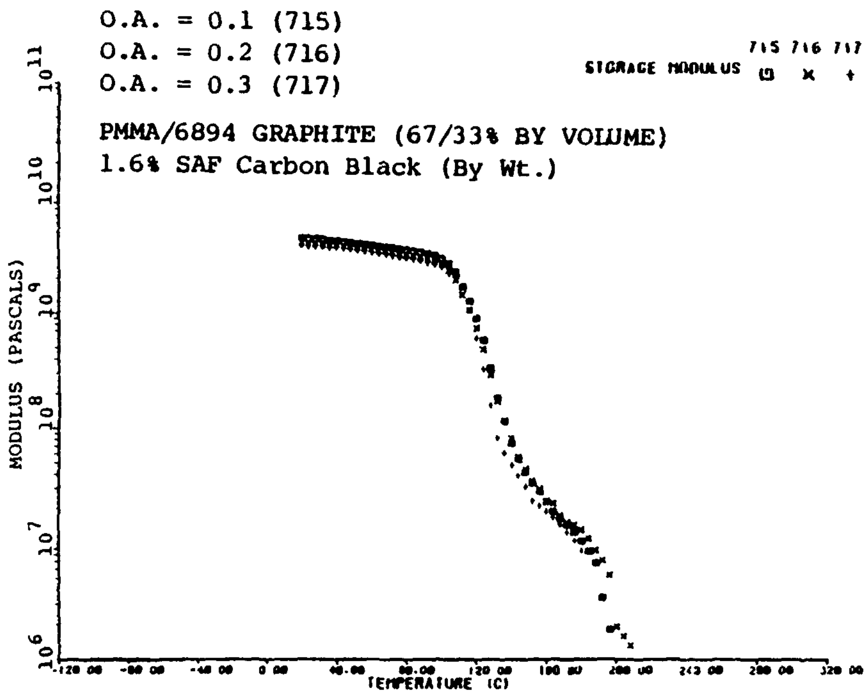


Figure B-8. Graphite Filled Polymethylmethacrylate DMA Storage Modulus Data Taken at Various Amplitude Levels.

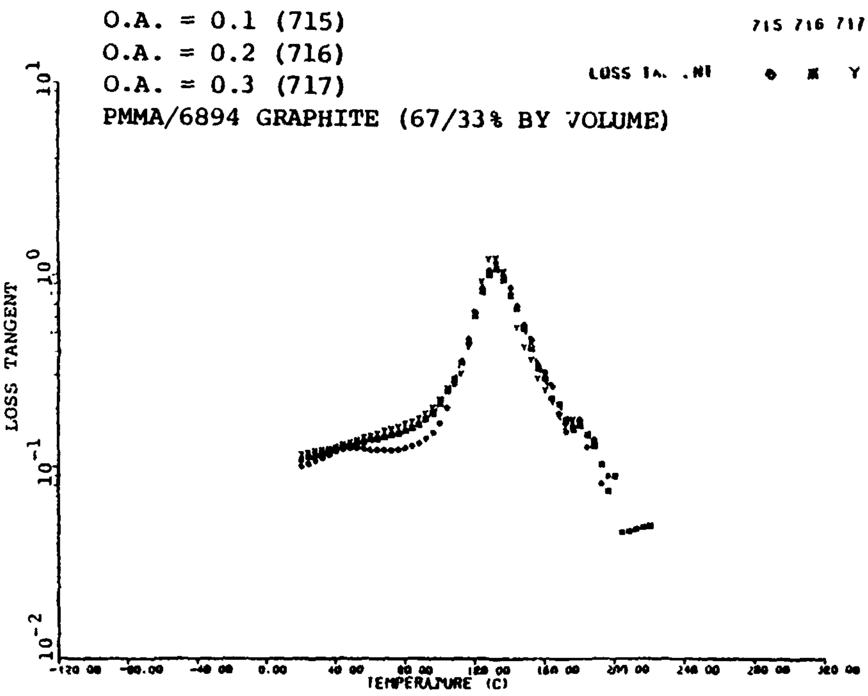


Figure B-9. Graphite Filled Polymethylmethacrylate DMA Loss Tangent Data Taken at Various Amplitude Levels.

APPENDIX C

TABULAR COMPILATION OF DMA DYNAMIC MECHANICAL DATA FOR HIGH TEMPERATURE POLYMERS

DMA tabular data for the individual polymers of Table 6 are presented on the following pages in abbreviated form. The original data lists were edited using an algorithm that proceeds as follows. Beginning at low temperatures in the glassy state the first storage modulus value E_i is multiplied by 0.9, thus

$$\text{Test}_i = E_i \times 0.9$$

The following comparison is then carried out:

$$E_{i+1} < \text{Test}_i$$

if not, the comparison is continued until

$$E_{i+n} \leqq E_i \times 0.9$$

Then $E_i \times 0.9$ is printed out, and Test_i is recalculated so that

$$\text{Test}_{i(\text{new})} = E_i \times 0.9$$

If at any time $E_{i+n} \leqq \text{Test}_i$, E_{i+n} is printed out, i is reset and the process is continued as above.

9/8/82
RUN332

P1800

(L/T RATIO = 13.475)

SAMPLE DIMENSIONS

LENGTH=0.019000 WIDTH=0.009630 THICK=0.001410 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.131E+02	0.696E+01	0.339E+10	0.201E-01	0.621E+08
-0.100E+03	0.127E+02	0.586E+01	0.318E+10	0.180E-01	0.572E+08
-0.800E+02	0.124E+02	0.426E+01	0.303E+10	0.137E-01	0.415E+08
-0.600E+02	0.121E+02	0.337E+01	0.289E+10	0.113E-01	0.328E+08
-0.400E+02	0.120E+02	0.264E+0	0.282E+10	0.909E-02	0.256E+08
-0.200E+02	0.120E+02	0.196E+01	0.280E+10	0.680E-02	0.190E+08
0.000E+00	0.118E+02	0.147E+01	0.271E+10	0.525E-02	0.143E+08
0.200E+02	0.117E+02	0.122E+01	0.266E+10	0.445E-02	0.118E+08
0.400E+02	0.116E+02	0.113E+01	0.263E+10	0.416E-02	0.109E+02
0.600E+02	0.115E+02	0.110E+01	0.259E+10	0.410E-02	0.106E+08
0.800E+02	0.114E+02	0.106E+01	0.253E+10	0.405E-02	0.102E+08
0.100E+03	0.114E+02	0.990E+00	0.251E+10	0.381E-02	0.957E+07
0.120E+03	0.112E+02	0.900E+00	0.246E+10	0.353E-02	0.869E+07
0.140E+03	0.112E+02	0.910E+00	0.242E+10	0.362E-02	0.878E+07
0.160E+03	0.110E+02	0.113E+01	0.237E+10	0.460E-02	0.109E+08
0.180E+03	0.107E+02	0.744E+01	0.220E+10	0.324E-01	0.714E+08
0.184E+03	0.101E+02	0.131E+02	0.198E+10	0.629E-01	0.125E+09
0.188E+03	0.929E+01	0.282E+02	0.164E+10	0.162E+00	0.266E+09
0.190E+03	0.865E+01	0.415E+02	0.141E+10	0.275E+00	0.386E+09
0.192E+03	0.751E+01	0.605E+02	0.103E+10	0.532E+00	0.547E+09
0.194E+03	0.598E+01	0.808E+02	0.606E+09	0.112E+01	0.679E+09
0.196E+03	0.503E+01	0.781E+02	0.392E+09	0.153E+01	0.600E+09
0.198E+03	0.462E+01	0.512E+02	0.323E+09	0.116E+01	0.374E+09

200 P 3-21-81

8/19/82
RUN365

(L/T RATIO = 7.135

SAMPLE DIMENSIONS

LENGTH=0.0[illegible]50 WIDTH=0.010670 THICK=0.000890 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E-03	0.234E+02	0.295E+02	0.331E+10	0.267E-01	0.384E+08
-0.100E+03	0.229E+02	0.293E+02	0.317E+10	0.276E-01	0.876E+08
-0.800E+02	0.223E+02	0.230E+02	0.299E+10	0.230E-01	0.688E+08
-0.600E+02	0.219E+02	0.178E+02	0.288E+10	0.184E-01	0.531E+08
-0.400E+02	0.215E+02	0.150E+02	0.278E+10	0.162E-01	0.449E+08
-0.200E+02	0.213E+02	0.130E+02	0.273E+10	0.143E-01	0.389E+08
0.000E+00	0.210E+02	0.115E+02	0.264E+10	0.130E-01	0.344E+08
0.200E+02	0.208E+02	0.100E+02	0.259E+10	0.115E-01	0.299E+08
0.400E+02	0.204E+02	0.900E+01	0.250E+10	0.108E-01	0.269E+08
0.600E+02	0.202E+02	0.900E+01	0.245E+10	0.110E-01	0.269E+08
0.800E+02	0.199E+02	0.825E+01	0.238E+10	0.103E-01	0.246E+08
0.100E+03	0.198E+02	0.850E+01	0.236E+10	0.108E-01	0.254E+08
0.120E+03	0.198E+02	0.800E+01	0.235E+10	0.102E-01	0.239E+08
0.140E+03	0.197E+02	0.875E+01	0.233E+10	0.112E-01	0.261E+08
0.160E+03	0.196E+02	0.850E+01	0.230E+10	0.110E-01	0.253E+08
0.180E+03	0.195E+02	0.875E+01	0.228E+10	0.115E-01	0.261E+08
0.200E+03	0.193E+02	0.103E+02	0.224E+10	0.136E-01	0.306E+08
0.220E+03	0.185E+02	0.248E+02	0.205E+10	0.360E-01	0.737E+08
0.224E+03	0.175E+02	0.420E+02	0.182E+10	0.684E-01	0.125E+09
0.228E+03	0.155E+02	0.740E+02	0.143E+10	0.153E+00	0.219E+09
0.230E+03	0.142E+02	0.940E+02	0.119E+10	0.232E+00	0.276E+09
0.232E+03	0.126E+02	0.101E+03	0.931E+09	0.315E+00	0.294E+09
0.234E+03	0.106E+02	0.123E+03	0.646E+09	0.544E+00	0.352E+09
0.236E+03	0.757E+01	0.958E+02	0.313E+09	0.828E+00	0.259E+09
0.238E+03	0.516E+01	0.653E+02	0.125E+09	0.121E+01	0.152E+09
0.240E+03	0.346E+01	0.258E+02	0.359E+08	0.106E+01	0.382E+08

9/7/82
RUN 44

ASTREL 360

(L/T RATIO = 18.676)

SAMPLE DIMENSIONS
LENGTH=0.019050 WIDTH=0.012700 THICK=0.001020 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.713E+01	0.231E+01	0.184E+10	0.113E-01	0.208E+08
0.400E+02	0.703E+01	0.236E+01	0.178E+10	0.118E-01	0.211E+08
0.600E+02	0.694E+01	0.230E+01	0.173E+10	0.118E-01	0.205E+08
0.800E+02	0.685E+01	0.220E+01	0.168E+10	0.116E-01	0.195E+08
0.100E+03	0.685E+01	0.206E+01	0.168E+10	0.109E-01	0.183E+08
0.120E+03	0.676E+01	0.187E+01	0.163E+10	0.101E-01	0.165E+08
0.140E+03	0.676E+01	0.169E+01	0.163E+10	0.917E-02	0.149E+08
0.160E+03	0.676E+01	0.152E+01	0.163E+10	0.825E-02	0.134E+08
0.180E+03	0.668E+01	0.141E+01	0.159E+10	0.784E-02	0.124E+08
0.200E+03	0.668E+01	0.135E+01	0.159E+10	0.750E-02	0.119E+08
0.220E+03	0.657E+01	0.129E+01	0.153E+10	0.741E-02	0.113E+08
0.240E+03	0.657E+01	0.139E+01	0.153E+10	0.799E-02	0.122E+08
0.260E+03	0.657E+01	0.162E+01	0.153E+10	0.931E-02	0.142E+08
0.280E+03	0.648E+01	0.331E+01	0.148E+10	0.195E-01	0.289E+08
0.300E+03	0.607E+01	0.336E+02	0.127E+10	0.226E+00	0.286E+09
0.302E+03	0.578E+01	0.410E+02	0.112E+10	0.304E+00	0.342E+09
0.304E+03	0.548E+01	0.475E+02	0.985E+09	0.392E+00	0.386E+09
0.305E+03	0.519E+01	0.498E+02	0.857E+09	0.458E+00	0.393E+09
0.310E+03	0.366E+01	0.370E+02	0.299E+09	0.685E+00	0.205E+09
0.312E+03	0.307E+01	0.232E+02	0.136E+09	0.610E+00	0.830E+08
0.314E+03	0.269E+01	0.129E+02	0.457E+08	0.442E+00	0.202E+08

7/19/82
RUN7677

UPJOHN 2080

(L/T RATIO = 12.451)

SAMPLE DIMENSIONS
LENGTH=0.012700 WIDTH=0.011190 THICK=0.001020 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.115E+03	0.150E+02	0.185E+02	0.435E+10	0.204E-01	0.888E+08
-0.500E+02	0.143E+02	0.780E+01	0.392E+10	0.953E-02	0.373E+08
-0.300E+02	0.141E+02	0.770E+01	0.384E+10	0.958E-02	0.368E+08
-0.100E+02	0.140E+02	0.800E+01	0.377E+10	0.102E-01	0.382E+08
0.100E+02	0.138E+02	0.870E+01	0.367E+10	0.113E-01	0.415E+08
0.300E+02	0.137E+02	0.930E+01	0.360E+10	0.123E-01	0.444E+08
0.500E+02	0.135E+02	0.106E+02	0.351E+10	0.144E-01	0.505E+08
0.700E+02	0.132E+02	0.106E+02	0.335E+10	0.150E-01	0.504E+08
0.900E+02	0.100E+02	0.117E+02	0.188E+10	0.288E-01	0.541E+08
0.110E+03	0.129E+02	0.128E+02	0.317E+10	0.192E-01	0.608E+08
0.130E+03	0.127E+02	0.141E+02	0.307E+10	0.219E-01	0.672E+08
0.150E+03	0.124E+02	0.155E+02	0.295E+10	0.249E-01	0.735E+08
0.170E+03	0.122E+02	0.168E+02	0.283E+10	0.280E-01	0.795E+08
0.190E+03	0.119E+02	0.175E+02	0.272E+10	0.304E-01	0.826E+08
0.210E+03	0.117E+02	0.178E+02	0.260E+10	0.322E-01	0.839E+08
0.230E+03	0.114E+02	0.173E+02	0.248E+10	0.328E-01	0.814E+08
0.250E+03	0.112E+02	0.161E+02	0.236E+10	0.320E-01	0.755E+08
0.270E+03	0.109E+02	0.148E+02	0.224E+10	0.309E-01	0.693E+08
0.290E+03	0.106E+02	0.141E+02	0.210E+10	0.313E-01	0.658E+08
0.310E+03	0.980E+01	0.227E+02	0.179E+10	0.586E-01	0.105E+09
0.315E+03	0.930E+01	0.324E+02	0.160E+10	0.929E-01	0.149E+09
0.320E+03	0.855E+01	0.465E+02	0.133E+10	0.158E+00	0.210E+09
0.325E+03	0.756E+01	0.623E+02	0.102E+10	0.270E+00	0.274E+09
0.330E+03	0.640E+01	0.673E+02	0.693E+09	0.407E+00	0.282E+09
0.335E+03	0.498E+01	0.550E+02	0.372E+09	0.550E+00	0.204E+09
0.340E+03	0.375E+01	0.340E+02	0.158E+09	0.600E+00	0.947E+08
0.345E+03	0.297E+01	0.137E+02	0.536E+08	0.385E+00	0.207E+08

7/29/82
RUN 78

SAMPLE 4203L

(L/T RATIO = 5.670)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.007930 THICK=0.001120 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.110E+03	0.243E+02	0.525E+02	0.241E+10	0.220E-01	0.532E+08
-0.900E+02	0.236E+02	0.680E+02	0.227E+10	0.303E-01	0.688E+08
-0.700E+02	0.228E+02	0.835E+02	0.212E+10	0.398E-01	0.844E+08
-0.500E+02	0.222E+02	0.698E+02	0.201E+10	0.351E-01	0.705E+08
-0.300E+02	0.217E+02	0.513E+02	0.192E+10	0.270E-01	0.518E+08
-0.100E+02	0.214E+02	0.439E+02	0.186E+10	0.238E-01	0.443E+08
0.100E+02	0.210E+02	0.415E+02	0.179E+10	0.233E-01	0.419E+08
0.300E+02	0.206E+02	0.417E+02	0.173E+10	0.244E-01	0.420E+08
0.500E+02	0.205E+02	0.426E+02	0.171E+10	0.251E-01	0.429E+08
0.700E+02	0.203E+02	0.440E+02	0.167E+10	0.265E-01	0.443E+08
0.900E+02	0.201E+02	0.450E+02	0.164E+10	0.276E-01	0.453E+08
0.110E+03	0.198E+02	0.440E+02	0.159E+10	0.278E-01	0.443E+08
0.130E+03	0.195E+02	0.440E+02	0.154E+10	0.287E-01	0.443E+08
0.150E+03	0.193E+02	0.440E+02	0.151E+10	0.293E-01	0.443E+08
0.170E+03	0.191E+02	0.438E+02	0.148E+10	0.298E-01	0.441E+08
0.190E+03	0.187E+02	0.412E+02	0.142E+10	0.292E-01	0.414E+08
0.210E+03	0.183E+02	0.390E+02	0.136E+10	0.289E-01	0.392E+08
0.230E+03	0.176E+02	0.360E+02	0.125E+10	0.288E-01	0.361E+08
0.250E+03	0.168E+02	0.430E+02	0.114E+10	0.378E-01	0.430E+08
0.260E+03	0.158E+02	0.715E+02	0.100E+10	0.710E-01	0.714E+08
0.265E+03	0.143E+02	0.761E+02	0.818E+09	0.923E-01	0.755E+08
0.270E+03	0.118E+02	0.807E+02	0.549E+09	0.144E+00	0.789E+08
0.275E+03	0.850E+01	0.853E+02	0.273E+09	0.293E+00	0.799E+08
0.280E+03	0.570E+01	0.899E+02	0.109E+09	0.686E+00	0.746E+08
0.285E+03	0.400E+01	0.355E+02	0.407E+08	0.550E+00	0.224E+08
0.290E+03	0.350E+01	0.120E+02	0.253E+08	0.243E+00	0.614E+07

9/7/82
RUN356

DUPONT KAPTON

(L/T RATIO = 0.611)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.000090 THICK=0.010400 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.100E+02	0.320E+02	0.458E+03	0.124E+10	0.221E+00	0.275E+09
0.300E+02	0.317E+02	0.473E+03	0.122E+10	0.233E+00	0.284E+09
0.500E+02	0.312E+02	0.538E+03	0.118E+10	0.274E+00	0.323E+09
0.700E+02	0.306E+02	0.620E+03	0.113E+10	0.328E+00	0.372E+09
0.900E+02	0.299E+02	0.700E+03	0.108E+10	0.388E+00	0.420E+09
0.110E+03	0.293E+02	0.825E+03	0.104E+10	0.477E+00	0.495E+09
0.130E+03	0.286E+02	0.945E+03	0.990E+09	0.572E+00	0.567E+09
0.150E+03	0.280E+02	0.945E+03	0.946E+09	0.599E+00	0.566E+09
0.170E+03	0.274E+02	0.798E+03	0.905E+09	0.528E+00	0.478E+09
0.190E+03	0.270E+02	0.625E+03	0.878E+09	0.426E+00	0.374E+09
0.210E+03	0.264E+02	0.570E+03	0.841E+09	0.406E+00	0.341E+09
0.230E+03	0.259E+02	0.450E+03	0.808E+09	0.333E+00	0.269E+09
0.250E+03	0.253E+02	0.380E+03	0.769E+09	0.296E+00	0.227E+09
0.270E+03	0.246E+02	0.338E+03	0.733E+09	0.275E+00	0.202E+09
0.290E+03	0.240E+02	0.300E+03	0.696E+09	0.257E+00	0.179E+09
0.310E+03	0.234E+02	0.278E+03	0.662E+09	0.251E+00	0.166E+09
0.330E+03	0.227E+02	0.263E+03	0.622E+09	0.252E+00	0.157E+09
0.350E+03	0.218E+02	0.260E+03	0.572E+09	0.271E+00	0.155E+09
0.368E+03	0.207E+02	0.268E+03	0.514E+09	0.310E+00	0.159E+09
0.382E+03	0.195E+02	0.265E+03	0.453E+09	0.347E+00	0.157E+09
0.396E+03	0.184E+02	0.248E+03	0.403E+09	0.365E+00	0.147E+09
0.412E+03	0.173E+02	0.225E+03	0.359E+09	0.371E+00	0.133E+09

9/7/82
RUN417

H-RESIN 1HR@130C 1HR@150C 1.5HR@180C 1.5HR@220C 220-270C OVERNIGHT

(L/T RATIO = 6.755)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.012200 THICK=0.000940 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.100E+02	0.195E+02	0.210E+02	0.170E+10	0.273E-01	0.465E+08
0.200E+02	0.193E+02	0.220E+02	0.166E+10	0.294E-01	0.487E+08
0.500E+02	0.192E+02	0.233E+02	0.164E+10	0.313E-01	0.514E+08
0.700E+02	0.193E+02	0.250E+02	0.166E+10	0.333E-01	0.553E+08
0.900E+02	0.192E+02	0.258E+02	0.164E+10	0.347E-01	0.570E+08
0.110E+03	0.191E+02	0.263E+02	0.162E+10	0.358E-01	0.581E+08
0.130E+03	0.190E+02	0.268E+02	0.161E+10	0.368E-01	0.592E+08
0.150E+03	0.189E+02	0.265E+02	0.159E+10	0.368E-01	0.586E+08
0.170E+03	0.187E+02	0.255E+02	0.156E+10	0.360E-01	0.564E+08
0.190E+03	0.186E+02	0.248E+02	0.154E+10	0.355E-01	0.547E+08
0.210E+03	0.185E+02	0.240E+02	0.152E+10	0.349E-01	0.530E+08
0.230E+03	0.183E+02	0.230E+02	0.149E+10	0.342E-01	0.508E+08
0.250E+03	0.181E+02	0.228E+02	0.146E+10	0.345E-01	0.502E+08
0.270E+03	0.176E+02	0.250E+02	0.139E+10	0.398E-01	0.551E+08
0.286E+03	0.166E+02	0.250E+02	0.123E+10	0.447E-01	0.550E+08
0.292E+03	0.159E+02	0.235E+02	0.110E+10	0.468E-01	0.516E+08
0.296E+03	0.150E+02	0.213E+02	0.989E+09	0.470E-01	0.465E+08
0.300E+03	0.141E+02	0.185E+02	0.868E+09	0.465E-01	0.403E+08
0.304E+03	0.130E+02	0.163E+02	0.739E+09	0.477E-01	0.352E+08
0.308E+03	0.121E+02	0.138E+02	0.634E+09	0.468E-01	0.296E+08
0.310E+03	0.115E+02	0.125E+02	0.570E+09	0.471E-01	0.268E+08
0.314E+03	0.104E+02	0.108E+02	0.459E+09	0.496E-01	0.228E+08
0.316E+03	0.963E+01	0.100E+02	0.392E+09	0.535E-01	0.210E+08
0.318E+03	0.891E+01	0.950E+01	0.333E+09	0.593E-01	0.197E+08
0.320E+03	0.804E+01	0.825E+01	0.265E+09	0.633E-01	0.168E+08
0.322E+03	0.715E+01	0.725E+01	0.204E+09	0.703E-01	0.144E+08
0.324E+03	0.651E+01	0.625E+01	0.165E+09	0.731E-01	0.120E+08
0.326E+03	0.621E+01	0.550E+01	0.147E+09	0.707E-01	0.104E+08
0.330E+03	0.591E+01	0.525E+01	0.131E+09	0.745E-01	0.974E+07
0.350E+03	0.611E+01	0.450E+01	0.142E+09	0.597E-01	0.846E+07

DIS POLYIMIDE

L/T RATIO = 4 150

SAMPLE DIMENSIONS

LENGTH=0.06350 WIDTH=0.00910 THICK=0.001530 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.423E+02	0.202E+03	0.230E+10	0.281E-01	0.646E+08
-0.100E+03	0.401E+02	0.182E+03	0.208E+10	0.280E-01	0.582E+08
-0.800E+02	0.393E+02	0.162E+03	0.199E+10	0.261E-01	0.518E+08
-0.600E+02	0.385E+02	0.142E+03	0.191E+10	0.238E-01	0.454E+08
-0.400E+02	0.380E+02	0.138E+03	0.186E+10	0.237E-01	0.442E+08
-0.200E+02	0.375E+02	0.136E+03	0.181E+10	0.240E-01	0.436E+08
0.000E+00	0.369E+02	0.134E+03	0.175E+10	0.245E-01	0.429E+08
0.200E+02	0.360E+02	0.132E+03	0.167E+10	0.252E-01	0.421E+08
0.400E+02	0.354E+02	0.128E+03	0.161E+10	0.253E-01	0.407E+08
0.600E+02	0.346E+02	0.124E+03	0.154E+10	0.257E-01	0.397E+08
0.800E+02	0.339E+02	0.129E+03	0.148E+10	0.279E-01	0.412E+08
0.100E+03	0.333E+02	0.128E+03	0.142E+10	0.288E-01	0.410E+08
0.120E+03	0.328E+02	0.123E+03	0.138E+10	0.284E-01	0.392E+08
0.140E+03	0.323E+02	0.115E+03	0.134E+10	0.273E-01	0.366E+08
0.160E+03	0.318E+02	0.107E+03	0.130E+10	0.262E-01	0.340E+08
0.180E+03	0.315E+02	0.100E+03	0.128E+10	0.251E-01	0.320E+08
0.200E+03	0.311E+02	0.983E+02	0.125E+10	0.251E-01	0.314E+08
0.220E+03	0.308E+02	0.988E+02	0.122E+10	0.259E-01	0.315E+08
0.240E+03	0.304E+02	0.990E+02	0.119E+10	0.266E-01	0.316E+08
0.260E+03	0.298E+02	0.107E+03	0.114E+10	0.300E-01	0.342E+08
0.280E+03	0.285E+02	0.148E+03	0.104E+10	0.450E-01	0.470E+08
0.292E+03	0.268E+02	0.196E+03	0.919E+09	0.678E-01	0.622E+08
0.296E+03	0.254E+02	0.205E+03	0.826E+09	0.788E-01	0.651E+08
0.300E+03	0.240E+02	0.214E+03	0.738E+09	0.919E-01	0.678E+08
0.304E+03	0.224E+02	0.223E+03	0.640E+09	0.110E+00	0.706E+08
0.306E+03	0.211E+02	0.226E+03	0.570E+09	0.126E+00	0.717E+08
0.310E+03	0.190E+02	0.236E+03	0.460E+09	0.162E+00	0.743E+08
0.312E+03	0.180E+02	0.240E+03	0.412E+09	0.184E+00	0.756E+08
0.314E+03	0.170E+02	0.245E+03	0.366E+09	0.210E+00	0.769E+08
0.316E+03	0.160E+02	0.250E+03	0.324E+09	0.242E+00	0.782E+08
0.318E+03	0.151E+02	0.245E+03	0.288E+09	0.265E+00	0.764E+08
0.320E+03	0.141E+02	0.240E+03	0.250E+09	0.298E+00	0.747E+08
0.322E+03	0.131E+02	0.236E+03	0.215E+09	0.339E+00	0.729E+08
0.324E+03	0.120E+02	0.231E+03	0.179E+09	0.398E+00	0.710E+08
0.326E+03	0.111E+02	0.226E+03	0.152E+09	0.453E+00	0.691E+08
0.328E+03	0.103E+02	0.223E+03	0.128E+09	0.525E+00	0.673E+08
0.330E+03	0.925E+01	0.218E+03	0.103E+09	0.632E+00	0.650E+08
0.332E+03	0.838E+01	0.208E+03	0.829E+08	0.735E+00	0.610E+08
0.334E+03	0.763E+01	0.195E+03	0.674E+08	0.832E+00	0.560E+08
0.336E+03	0.700E+01	0.150E+03	0.555E+08	0.759E+00	0.422E+08
0.338E+03	0.625E+01	0.110E+03	0.427E+08	0.698E+00	0.298E+08
0.340E+03	0.575E+01	0.835E+02	0.349E+08	0.626E+00	0.218E+08
0.342E+03	0.525E+01	0.685E+02	0.278E+08	0.616E+00	0.171E+08
0.344E+03	0.488E+01	0.555E+02	0.228E+08	0.579E+00	0.132E+08
0.346E+03	0.438E+01	0.445E+02	0.169E+08	0.577E+00	0.972E+07
0.348E+03	0.413E+01	0.353E+02	0.141E+08	0.514E+00	0.725E+07
0.350E+03	0.375E+01	0.278E+02	0.103E+08	0.489E+00	0.503E+07

7/21/82
RUN337

TRANS POLYIMIDE

(L/T RATIO = 4.669)

SAMPLE DIMENSIONS

LENGTH=0.00[illegible]50 WIDTH=0.00[illegible]910 THICK=0.001360 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.400E+02	0.936E+02	0.294E+10	0.145E-01	0.426E+08
-0.100E+03	0.397E+02	0.894E+02	0.289E+10	0.141E-01	0.407E+08
-0.800E+02	0.391E+02	0.840E+02	0.281E+10	0.136E-01	0.383E+08
-0.600E+02	0.383E+02	0.818E+02	0.269E+10	0.138E-01	0.372E+08
-0.400E+02	0.373E+02	0.816E+02	0.255E+10	0.145E-01	0.371E+08
-0.200E+02	0.369E+02	0.854E+02	0.250E+10	0.156E-01	0.389E+08
0.000E+00	0.360E+02	0.920E+02	0.238E+10	0.176E-01	0.419E+08
0.200E+02	0.352E+02	0.100E+03	0.227E+10	0.200E-01	0.455E+08
0.400E+02	0.348E+02	0.109E+03	0.222E+10	0.224E-01	0.498E+08
0.600E+02	0.341E+02	0.116E+03	0.213E+10	0.248E-01	0.529E+08
0.800E+02	0.335E+02	0.119E+03	0.206E+10	0.262E-01	0.541E+08
0.100E+03	0.330E+02	0.118E+03	0.200E+10	0.268E-01	0.535E+08
0.120E+03	0.325E+02	0.112E+03	0.193E+10	0.265E-01	0.511E+08
0.140E+03	0.319E+02	0.108E+03	0.187E+10	0.262E-01	0.489E+08
0.160E+03	0.315E+02	0.104E+03	0.182E+10	0.261E-01	0.474E+08
0.180E+03	0.309E+02	0.104E+03	0.175E+10	0.270E-01	0.472E+08
0.200E+03	0.303E+02	0.106E+03	0.168E+10	0.286E-01	0.481E+08
0.220E+03	0.297E+02	0.114E+03	0.162E+10	0.319E-01	0.516E+08
0.240E+03	0.290E+02	0.128E+03	0.154E+10	0.375E-01	0.579E+08
0.260E+03	0.280E+02	0.138E+03	0.143E+10	0.439E-01	0.627E+08
0.280E+03	0.265E+02	0.144E+03	0.128E+10	0.510E-01	0.652E+08
0.295E+03	0.249E+02	0.148E+03	0.113E+10	0.592E-01	0.670E+08
0.305E+03	0.235E+02	0.152E+03	0.101E+10	0.682E-01	0.686E+08
0.315E+03	0.221E+02	0.155E+03	0.889E+09	0.786E-01	0.699E+08
0.325E+03	0.195E+02	0.169E+03	0.690E+09	0.110E+00	0.759E+08
0.330E+03	0.175E+02	0.195E+03	0.553E+09	0.158E+00	0.873E+08
0.335E+03	0.159E+02	0.225E+03	0.455E+09	0.221E+00	0.100E+09
0.340E+03	0.135E+02	0.248E+03	0.325E+09	0.337E+00	0.110E+09
0.343E+03	0.125E+02	0.250E+03	0.277E+09	0.396E+00	0.110E+09
0.345E+03	0.114E+02	0.245E+03	0.228E+09	0.469E+00	0.107E+09
0.350E+03	0.940E+01	0.216E+03	0.152E+09	0.606E+00	0.919E+08
0.355E+03	0.744E+01	0.160E+03	0.908E+08	0.717E+00	0.651E+08
0.360E+03	0.600E+01	0.106E+03	0.551E+08	0.730E+00	0.402E+08
0.365E+03	0.520E+01	0.670E+02	0.386E+08	0.614E+00	0.237E+08
0.370E+03	0.438E+01	0.440E+02	0.241E+08	0.569E+00	0.137E+08

RU2133

(L/T RATIO = 3.994)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010160 THICK=0.001590 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.499E+02	0.735E+02	0.280E+10	0.146E-01	0.409E+08
-0.100E+03	0.496E+02	0.715E+02	0.276E+10	0.144E-01	0.398E+08
-0.800E+02	0.489E+02	0.538E+02	0.267E+10	0.112E-01	0.299E+08
-0.600E+02	0.483E+02	0.473E+02	0.261E+10	0.101E-01	0.263E+08
-0.400E+02	0.478E+02	0.490E+02	0.256E+10	0.106E-01	0.273E+08
-0.200E+02	0.472E+02	0.543E+02	0.250E+10	0.121E-01	0.302E+08
0.000E+00	0.465E+02	0.630E+02	0.243E+10	0.144E-01	0.351E+08
0.200E+02	0.459E+02	0.748E+02	0.236E+10	0.176E-01	0.416E+08
0.400E+02	0.452E+02	0.855E+02	0.229E+10	0.208E-01	0.476E+08
0.600E+02	0.442E+02	0.978E+02	0.219E+10	0.248E-01	0.544E+08
0.800E+02	0.433E+02	0.108E+03	0.211E+10	0.286E-01	0.602E+08
0.100E+03	0.424E+02	0.116E+03	0.201E+10	0.321E-01	0.645E+08
0.120E+03	0.412E+02	0.122E+03	0.191E+10	0.356E-01	0.679E+08
0.140E+03	0.399E+02	0.123E+03	0.178E+10	0.382E-01	0.681E+08
0.160E+03	0.389E+02	0.116E+03	0.170E+10	0.381E-01	0.646E+08
0.180E+03	0.380E+02	0.104E+03	0.162E+10	0.355E-01	0.575E+08
0.200E+03	0.372E+02	0.880E+02	0.155E+10	0.315E-01	0.489E+08
0.220E+03	0.364E+02	0.723E+02	0.149E+10	0.270E-01	0.401E+08
0.240E+03	0.356E+02	0.613E+02	0.142E+10	0.239E-01	0.340E+08
0.260E+03	0.347E+02	0.565E+02	0.135E+10	0.232E-01	0.314E+08
0.280E+03	0.337E+02	0.573E+02	0.127E+10	0.250E-01	0.318E+08
0.300E+03	0.322E+02	0.663E+02	0.116E+10	0.316E-01	0.368E+08
0.314E+03	0.305E+02	0.803E+02	0.104E+10	0.428E-01	0.445E+08
0.320E+03	0.287E+02	0.127E+03	0.923E+09	0.761E-01	0.702E+08
0.324E+03	0.272E+02	0.138E+03	0.824E+09	0.924E-01	0.761E+08
0.328E+03	0.258E+02	0.174E+03	0.741E+09	0.130E+00	0.962E+08
0.332E+03	0.239E+02	0.229E+03	0.635E+09	0.199E+00	0.126E+09
0.334E+03	0.224E+02	0.263E+03	0.556E+09	0.261E+00	0.145E+09
0.336E+03	0.205E+02	0.292E+03	0.465E+09	0.346E+00	0.161E+09
0.338E+03	0.182E+02	0.309E+03	0.366E+09	0.461E+00	0.169E+09
0.340E+03	0.156E+02	0.304E+03	0.267E+09	0.620E+00	0.166E+09
0.342E+03	0.127E+02	0.272E+03	0.174E+09	0.842E+00	0.146E+09
0.344E+03	0.101E+02	0.213E+03	0.108E+09	0.103E+01	0.112E+09
0.346E+03	0.771E+01	0.145E+03	0.601E+08	0.121E+01	0.726E+08
0.348E+03	0.625E+01	0.913E+02	0.371E+08	0.116E+01	0.429E+08
0.350E+03	0.531E+01	0.563E+02	0.249E+08	0.988E+00	0.246E+08
0.352E+03	0.465E+01	0.353E+02	0.174E+08	0.809E+00	0.141E+08
0.354E+03	0.421E+01	0.223E+02	0.131E+08	0.622E+00	0.813E+07
0.356E+03	0.380E+01	0.143E+02	0.936E+07	0.489E+00	0.458E+07
0.358E+03	0.351E+01	0.900E+01	0.700E+07	0.362E+00	0.253E+07
0.360E+03	0.330E+01	0.525E+01	0.536E+07	0.239E+00	0.128E+07
0.362E+03	0.319E+01	0.275E+01	0.454E+07	0.134E+00	0.610E+06
0.364E+03	0.310E+01	0.125E+01	0.392E+07	0.645E-01	0.253E+06
0.366E+03	0.300E+01	0.000E+00	0.324E+07	0.000E+00	0.000E+00

9/7/82
RUN376

VESPEL 1 DRIED

(L/T RATIO = 6.978)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010670 THICK=0.000910 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.240E+02	0.240E+02	0.325E+10	0.207E-01	0.673E+08
-0.100E+03	0.234E+02	0.258E+02	0.308E+10	0.234E-01	0.722E+08
-0.800E+02	0.229E+02	0.253E+02	0.295E+10	0.240E-01	0.708E+08
-0.600E+02	0.225E+02	0.223E+02	0.285E+10	0.219E-01	0.623E+08
-0.400E+02	0.220E+02	0.193E+02	0.274E+10	0.196E-01	0.539E+08
-0.200E+02	0.217E+02	0.173E+02	0.266E+10	0.181E-01	[illegible]
0.000E+00	0.214E+02	0.160E+02	0.257E+10	0.174E-01	0.443E+08
0.200E+02	0.210E+02	0.153E+02	0.247E+10	0.172E-01	0.426E+08
0.400E+02	0.206E+02	0.150E+02	0.238E+10	0.176E-01	0.419E+08
0.600E+02	0.202E+02	0.150E+02	0.229E+10	0.183E-01	0.419E+08
0.800E+02	0.198E+02	0.135E+02	0.220E+10	0.171E-01	0.377E+08
0.100E+03	0.195E+02	0.123E+02	0.214E+10	0.160E-01	0.342E+08
0.120E+03	0.192E+02	0.108E+02	0.207E+10	0.145E-01	0.300E+08
0.140E+03	0.190E+02	0.950E+01	0.203E+10	0.131E-01	0.265E+08
0.160E+03	0.187E+02	0.925E+01	0.196E+10	0.131E-01	0.258E+08
0.180E+03	0.183E+02	0.950E+01	0.188E+10	0.141E-01	0.264E+08
0.200E+03	0.178E+02	0.100E+02	0.177E+10	0.157E-01	0.278E+08
0.220E+03	0.174E+02	0.975E+01	0.169E+10	0.161E-01	0.271E+08
0.240E+03	0.170E+02	0.925E+01	0.161E+10	0.159E-01	0.257E+08
0.260E+03	0.166E+02	0.850E+01	0.153E+10	0.154E-01	0.236E+08
0.280E+03	0.161E+02	0.825E+01	0.144E+10	0.158E-01	0.228E+08
0.300E+03	0.157E+02	0.825E+01	0.137E+10	0.167E-01	0.228E+08
0.320E+03	0.152E+02	0.800E+01	0.128E+10	0.172E-01	0.221E+08
0.340E+03	0.147E+02	0.800E+01	0.120E+10	0.184E-01	0.220E+08
0.360E+03	0.141E+02	0.800E+01	0.110E+10	0.200E-01	0.220E+08
0.380E+03	0.136E+02	0.750E+01	0.101E+10	0.203E-01	0.206E+08
0.400E+03	0.130E+02	0.700E+01	0.927E+09	0.206E-01	0.191E+08
0.420E+03	0.123E+02	0.625E+01	0.825E+09	0.206E-01	0.170E+08
0.440E+03	0.116E+02	0.600E+01	0.733E+09	0.222E-01	0.162E+08
0.460E+03	0.111E+02	0.600E+01	0.663E+09	0.244E-01	0.162E+08

3/20/82
RUN339

FLOURINATED BIPHENOL A

(L/T RATIO = 5.570)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009910 THICK=0.001140 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.301E+02	0.828E+02	0.282E+10	0.226E-01	0.638E+08
-0.100E+03	0.293E+02	0.850E+02	0.271E+10	0.242E-01	0.655E+08
-0.800E+02	0.289E+02	0.883E+02	0.259E+10	0.262E-01	0.680E+08
-0.600E+02	0.284E+02	0.945E+02	0.250E+10	0.291E-01	0.728E+08
-0.400E+02	0.275E+02	0.110E+03	0.235E+10	0.362E-01	0.849E+08
-0.200E+02	0.273E+02	0.122E+03	0.231E+10	0.407E-01	0.937E+08
0.000E+00	0.271E+02	0.124E+03	0.229E+10	0.415E-01	0.951E+08
0.200E+02	0.268E+02	0.118E+03	0.222E+10	0.410E-01	0.912E+08
0.400E+02	0.260E+02	0.116E+03	0.211E+10	0.422E-01	0.889E+08
0.560E+02	0.247E+02	0.990E+02	0.189E+10	0.402E-01	0.761E+08
0.760E+02	0.244E+02	0.843E+02	0.184E+10	0.352E-01	0.647E+08
0.960E+02	0.236E+02	0.860E+02	0.173E+10	0.382E-01	0.660E+08
0.116E+03	0.236E+02	0.925E+02	0.173E+10	0.411E-01	0.710E+08
0.136E+03	0.223E+02	0.146E+03	0.153E+10	0.729E-01	0.112E+09
0.140E+03	0.208E+02	0.206E+03	0.133E+10	0.119E+00	0.158E+09
0.142E+03	0.195E+02	0.253E+03	0.117E+10	0.165E+00	0.193E+09
0.144E+03	0.176E+02	0.314E+03	0.953E+09	0.250E+00	0.239E+09
0.146E+03	0.154E+02	0.368E+03	0.721E+09	0.386E+00	0.278E+09
0.148E+03	0.123E+02	0.390E+03	0.451E+09	0.644E+00	0.290E+09
0.150E+03	0.850E+01	0.317E+03	0.207E+09	0.109E+01	0.225E+09
0.152E+03	0.488E+01	0.168E+03	0.552E+08	0.176E+01	0.970E+08
0.154E+03	0.350E+01	0.648E+02	0.192E+08	0.131E+01	0.251E+08

8/20/82
RUN357

PHILLIPS RYTON POLYPHENYLENE

(L/T RATIO = 0.625)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.000290 THICK=0.010160 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.100E+02	0.360E+02	0.318E+02	0.499E+09	0.122E-01	0.606E+07
0.300E+02	0.358E+02	0.323E+02	0.494E+09	0.125E-01	0.616E+07
0.500E+02	0.354E+02	0.340E+02	0.483E+09	0.134E-01	0.649E+07
0.700E+02	0.346E+02	0.448E+02	0.461E+09	0.185E-01	0.854E+07
0.800E+02	0.321E+02	0.124E+03	0.397E+09	0.596E-01	0.237E+08
0.840E+02	0.274E+02	0.350E+03	0.288E+09	0.232E+00	0.667E+08
0.860E+02	0.231E+02	0.457E+03	0.205E+09	0.423E+00	0.866E+08
0.880E+02	0.152E+02	0.496E+03	0.875E+08	0.106E+01	0.926E+08
0.900E+02	0.731E+01	0.231E+03	0.183E+08	0.214E+01	0.392E+08
0.920E+02	0.499E+01	0.695E+02	0.726E+07	0.139E+01	0.101E+08
0.940E+02	0.390E+01	0.233E+02	0.351E+07	0.758E+00	0.266E+07
0.960E+02	0.310E+01	0.750E+01	0.135E+07	0.387E+00	0.522E+06
0.980E+02	0.265E+01	0.500E+00	0.347E+06	0.353E-01	0.123E+05

8/20/82
RUN354

FLOURO-SULFIDE

(L/T RATIO = 5. 474)

SAMPLE DIMENSIONS

LENGTH=0. 006350 WIDTH=0. 009650 THICK=0. 001160 OSC AMP=0. 05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0. 305E+02	0. 500E+02	0. 282E+10	0. 266E-01	0. 752E+08
-0. 100E+03	0. 298E+02	0. 593E+02	0. 269E+10	0. 331E-01	0. 891E+08
-0. 800E+02	0. 292E+02	0. 700E+02	0. 258E+10	0. 408E-01	0. 105E+09
-0. 600E+02	0. 287E+02	0. 788E+02	0. 249E+10	0. 475E-01	0. 118E+09
-0. 400E+02	0. 282E+02	0. 778E+02	0. 240E+10	0. 486E-01	0. 117E+09
-0. 200E+02	0. 278E+02	0. 685E+02	0. 233E+10	0. 441E-01	0. 103E+09
0. 000E+00	0. 273E+02	0. 565E+02	0. 226E+10	0. 375E-01	0. 848E+08
0. 200E+02	0. 270E+02	0. 465E+02	0. 221E+10	0. 315E-01	0. 698E+08
0. 400E+02	0. 269E+02	0. 400E+02	0. 218E+10	0. 275E-01	0. 600E+08
0. 600E+02	0. 265E+02	0. 363E+02	0. 213E+10	0. 255E-01	0. 544E+08
0. 800E+02	0. 263E+02	0. 330E+02	0. 209E+10	0. 237E-01	0. 495E+08
0. 100E+03	0. 260E+02	0. 340E+02	0. 204E+10	0. 250E-01	0. 510E+08
0. 118E+03	0. 240E+02	0. 865E+02	0. 174E+10	0. 746E-01	0. 130E+09
0. 122E+03	0. 215E+02	0. 132E+03	0. 139E+10	0. 142E+00	0. 197E+09
0. 124E+03	0. 194E+02	0. 155E+03	0. 113E+10	0. 204E+00	0. 230E+09
0. 126E+03	0. 167E+02	0. 177E+03	0. 832E+09	0. 314E+00	0. 262E+09
0. 128E+03	0. 133E+02	0. 199E+03	0. 523E+09	0. 555E+00	0. 290E+09
0. 130E+03	0. 951E+01	0. 220E+03	0. 257E+09	0. 121E+01	0. 310E+09
0. 132E+03	0. 663E+01	0. 101E+03	0. 115E+09	0. 114E+01	0. 131E+09
0. 134E+03	0. 484E+01	0. 468E+02	0. 527E+08	0. 991E+00	0. 522E+08
0. 136E+03	0. 386E+01	0. 203E+02	0. 268E+08	0. 673E+00	0. 181E+08
0. 138E+03	0. 315E+01	0. 800E+01	0. 116E+08	0. 400E+00	0. 463E+07
0. 140E+03	0. 266E+01	0. 250E+00	0. 293E+07	0. 175E-01	0. 513E+05

3/20/82
RUN31?

POLYSULFONE C=0

L/T RATIO = 8.038

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.011940 THICK=0.000790 SEC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.159E+02	0.163E+02	0.193E+10	0.319E-01	0.614E+08
-0.100E-03	0.156E+02	0.147E+02	0.186E+10	0.298E-01	0.554E+08
-0.800E-02	0.154E+02	0.129E+02	0.180E+10	0.270E-01	0.486E+08
-0.600E+02	0.151E+02	0.108E+02	0.173E+10	0.236E-01	0.408E+08
-0.400E+02	0.148E+02	0.916E+01	0.166E+10	0.208E-01	0.345E+08
-0.200E+02	0.145E+02	0.764E+01	0.158E+10	0.181E-01	0.287E+08
0.000E+00	0.142E+02	0.628E+01	0.153E+10	0.154E-01	0.236E+08
0.200E+02	0.140E+02	0.542E+01	0.148E+10	0.137E-01	0.203E+08
0.400E+02	0.138E+02	0.482E+01	0.143E+10	0.126E-01	0.181E+08
0.600E+02	0.135E+02	0.424E+01	0.138E+10	0.115E-01	0.159E+08
0.800E+02	0.133E+02	0.400E+01	0.134E+10	0.112E-01	0.150E+08
0.100E+03	0.132E+02	0.394E+01	0.130E+10	0.113E-01	0.147E+08
0.120E+03	0.130E+02	0.380E+01	0.128E+10	0.111E-01	0.142E+08
0.140E+03	0.130E+02	0.386E+01	0.127E+10	0.114E-01	0.144E+08
0.160E+03	0.128E+02	0.454E+01	0.124E+10	0.137E-01	0.169E+08
0.180E+03	0.125E+02	0.816E+01	0.118E+10	0.257E-01	0.304E+08
0.185E+03	0.114E+02	0.142E+02	0.974E+09	0.537E-01	0.523E+08
0.190E+03	0.838E+01	0.352E+02	0.500E+09	0.249E+00	0.124E+09
0.194E+03	0.362E+01	0.653E+02	0.545E+08	0.247E+01	0.135E+09
0.195E+03	0.314E+01	0.648E+02	0.292E+08	0.326E+01	0.950E+08

9/20/82
RUN315

POLYSULFONE CH2

L/T RATIO = 7.299

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.012160 THICK=0.000870 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.236E-02	0.228E+02	0.378E+10	0.203E-01	0.767E+08
-0.100E+03	0.228E+02	0.265E+02	0.353E+10	0.253E-01	0.892E+08
-0.800E+02	0.221E+02	0.210E+02	0.331E-10	0.213E-01	0.707E+08
-0.600E-02	0.216E+02	0.150E+02	0.316E+10	0.159E-01	0.504E+08
-0.400E+02	0.212E+02	0.113E+02	0.305E+10	0.124E-01	0.378E+08
-0.200E+02	0.209E+02	0.925E+01	0.296E+10	0.105E-01	0.311E+08
0.000E+00	0.207E+02	0.800E+01	0.291E+10	0.925E-02	0.269E+08
0.200E+02	0.204E+02	0.700E+01	0.282E+10	0.833E-02	0.235E+08
0.400E+02	0.200E+02	0.750E+01	0.269E+10	0.935E-02	0.252E+08
0.600E+02	0.194E+02	0.725E+01	0.255E+10	0.952E-02	0.243E+08
0.800E+02	0.192E+02	0.725E+01	0.250E+10	0.972E-02	0.243E+08
0.100E+03	0.191E+02	0.725E+01	0.247E+10	0.982E-02	0.243E+08
0.120E+03	0.189E+02	0.550E+01	0.242E+10	0.763E-02	0.184E+08
0.140E+03	0.188E+02	0.500E+01	0.238E+10	0.703E-02	0.167E+08
0.160E+03	0.183E+02	0.133E+02	0.226E+10	0.196E-01	0.443E+08
0.168E+03	0.172E+02	0.378E+02	0.199E+10	0.633E-01	0.126E+09
0.170E+03	0.163E+02	0.550E+02	0.178E+10	0.103E+00	0.183E+09
0.172E+03	0.152E+02	0.773E+02	0.154E+10	0.166E+00	0.256E+09
0.174E+03	0.136E+02	0.100E+03	0.123E+10	0.269E+00	0.330E+09
0.176E+03	0.115E+02	0.101E+03	0.870E+09	0.376E+00	0.327E+09
0.178E+03	0.875E+01	0.101E+03	0.484E+09	0.653E+00	0.316E+09
0.180E+03	0.634E+01	0.705E+02	0.234E+09	0.870E+00	0.204E+09
0.182E+03	0.472E+01	0.358E+02	0.111E+09	0.794E+00	0.884E+08
0.184E+03	0.384E+01	0.163E+02	0.591E+08	0.547E+00	0.323E+08

9/8/82
RUN374

UNION CARBIDE RADEL

(L/T RATIO = 3.920)

SAMPLE DIMENSIONS
LENGTH=1.00150 WIDTH=0.0.0570 THICK=0.001520 OSC AMP=0.05

POINT 3 POINT VALUES

TIM OF TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E-03	0.459E+02	0.775E+02	0.213E+10	0.182E-01	0.388E+08
-0.100E-03	0.450E+02	0.865E+02	0.205E+10	0.212E-01	0.433E+08
-0.800E-02	0.442E+02	0.810E+02	0.197E+10	0.206E-01	0.406E+08
-0.600E-02	0.431E+02	0.615E+02	0.188E+10	0.164E-01	0.308E+08
-0.400E+02	0.425E+02	0.533E+02	0.183E-10	0.146E-01	0.267E+08
-0.200E-02	0.420E+02	0.480E+02	0.178E+10	0.135E-01	0.240E+08
0.000E-00	0.416E+02	0.423E+02	0.175E+10	0.121E-01	0.212E+08
0.200E-02	0.412E+02	0.405E+02	0.172E+10	0.118E-01	0.203E+08
0.400E-02	0.408E+02	0.405E+02	0.168E+10	0.120E-01	0.203E+08
0.600E-02	0.400E+02	0.373E+02	0.162E+10	0.115E-01	0.186E+08
0.800E+02	0.394E+02	0.368E+02	0.157E+10	0.117E-01	0.184E+08
0.100E+03	0.389E+02	0.385E+02	0.153E+10	0.126E-01	0.193E+08
0.120E+03	0.382E+02	0.398E+02	0.147E+10	0.135E-01	0.199E+08
0.140E-03	0.378E+02	0.350E+02	0.144E+10	0.121E-01	0.175E+08
0.160E+03	0.375E+02	0.345E+02	0.142E+10	0.122E-01	0.173E+08
0.180E-03	0.371E+02	0.368E+02	0.139E+10	0.132E-01	0.184E+08
0.200E-03	0.366E+02	0.435E+02	0.125E+10	0.161E-01	0.218E+08
0.218E-03	0.347E-02	0.106E+03	0.122E+10	0.434E-01	0.527E+08
0.222E-03	0.324E-02	0.196E+03	0.106E+10	0.923E-01	0.978E+08
0.224E+03	0.301E+02	0.226E+03	0.910E+09	0.157E+00	0.143E+09
0.226E-03	0.270E+02	0.356E+03	0.730E+09	0.243E+00	0.178E+09
0.228E-03	0.240E+02	0.403E+03	0.577E+09	0.347E+00	0.200E+09
0.230E-03	0.197E+02	0.451E+03	0.389E+09	0.574E+00	0.223E+09
0.232E-03	0.144E+02	0.416E+03	0.205E+09	0.989E+00	0.203E+09
0.234E-03	0.377E+01	0.253E+03	0.719E+08	0.163E+01	0.117E+09
0.236E-03	0.591E-01	0.106E+03	0.292E+08	0.150E+01	0.437E+08
0.238E-03	0.465E+01	0.438E+02	0.157E+08	0.100E+01	0.158E+08
0.240E-03	0.394E-01	0.195E+02	0.951E+07	0.624E+00	0.593E+07
0.242E-03	0.350E+01	0.900E+01	0.621E+07	0.364E+00	0.226E+07
0.244E+03	0.320E-01	0.400E+01	0.417E+07	0.194E+00	0.808E+06
0.246E+03	0.301E+01	0.125E+01	0.299E+07	0.683E-01	0.204E+06
0.248E+03	0.289E+01	0.750E+00	0.224E+07	0.446E-01	0.100E+06
0.250E-03	0.281E+01	0.250E+00	0.181E+07	0.157E-01	0.284E+05
0.252E+03	0.271E-01	0.250E+00	0.125E+07	0.168E-01	0.211E+05

8/20/82
FUN360

FLOURO-SULFONE

(L/T RATIO = 5.670)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010160 THICK=0.001120 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.251E+02	0.400E+02	0.201E+10	0.316E-01	0.633E+08
-0.100E+03	0.244E+02	0.348E+02	0.189E+10	0.290E-01	0.549E+08
-0.800E+02	0.235E+02	0.353E+02	0.177E+10	0.315E-01	0.557E+08
-0.600E+02	0.230E+02	0.250E+02	0.168E+10	0.235E-01	0.395E+08
-0.400E+02	0.224E+02	0.215E+02	0.159E+10	0.213E-01	0.339E+08
-0.200E+02	0.220E+02	0.145E+02	0.155E+10	0.148E-01	0.229E+08
0.000E+00	0.219E+02	0.113E+02	0.152E+10	0.117E-01	0.177E+08
0.200E+02	0.217E+02	0.103E+02	0.149E+10	0.108E-01	0.162E+08
0.400E+02	0.216E+02	0.975E+01	0.148E+10	0.104E-01	0.154E+08
0.600E+02	0.214E+02	0.100E+02	0.146E+10	0.108E-01	0.158E+08
0.800E+02	0.213E+02	0.103E+02	0.145E+10	0.112E-01	0.162E+08
0.100E+03	0.213E+02	0.105E+02	0.143E+10	0.115E-01	0.165E+08
0.120E+03	0.211E+02	0.110E+02	0.142E+10	0.122E-01	0.173E+08
0.140E+03	0.210E+02	0.123E+02	0.139E+10	0.138E-01	0.193E+08
0.160E+03	0.208E+02	0.130E+02	0.137E+10	0.150E-01	0.205E+08
0.180E+03	0.206E+02	0.165E+02	0.135E+10	0.192E-01	0.260E+08
0.200E+03	0.209E+02	0.318E+02	0.138E+10	0.362E-01	0.500E+08
0.214E+03	0.195E+02	0.873E+02	0.120E+10	0.114E+00	0.137E+09
0.218E+03	0.181E+02	0.106E+03	0.103E+10	0.160E+00	0.166E+09
0.220E+03	0.172E+02	0.113E+03	0.930E+09	0.190E+00	0.176E+09
0.222E+03	0.161E+02	0.119E+03	0.812E+09	0.228E+00	0.185E+09
0.224E+03	0.150E+02	0.125E+03	0.709E+09	0.274E+00	0.194E+09
0.226E+03	0.139E+02	0.132E+03	0.606E+09	0.336E+00	0.204E+09
0.228E+03	0.128E+02	0.138E+03	0.504E+09	0.420E+00	0.212E+09
0.230E+03	0.115E+02	0.127E+03	0.404E+09	0.477E+00	0.193E+09
0.232E+03	0.102E+02	0.116E+03	0.315E+09	0.552E+00	0.174E+09
0.234E+03	0.874E+01	0.105E+03	0.226E+09	0.680E+00	0.154E+09
0.236E+03	0.744E+01	0.933E+02	0.158E+09	0.836E+00	0.132E+09
0.238E+03	0.624E+01	0.720E+02	0.106E+09	0.918E+00	0.969E+08
0.240E+03	0.511E+01	0.498E+02	0.645E+08	0.944E+00	0.608E+08
0.242E+03	0.422E+01	0.320E+02	0.378E+08	0.889E+00	0.336E+08
0.244E+03	0.350E+01	0.190E+02	0.197E+08	0.769E+00	0.152E+08
0.246E+03	0.285E+01	0.925E+01	0.643E+07	0.565E+00	0.363E+07

9/8/82
RUN373

ATS 32. 1HR@125C, •1HR37MIN@168C

(L/T RATIO = 6.828)

SAMPLE DIMENSIONS

LENGTH=0.00[illegible]150 WIDTH=0.009400 THICK=0.000930 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL.
-0.150E-03	0.202E+02	0.950E+01	0.245E+10	0.115E-01	0.282E+08
-0.130E-03	0.198E+02	0.115E+02	0.235E+10	0.145E-01	0.341E+08
-0.110E-03	0.193E+02	0.135E+02	0.222E+10	0.180E-01	0.400E+08
-0.900E-02	0.189E+02	0.115E+02	0.213E+10	0.160E-01	0.341E+08
-0.700E-02	0.186E+02	0.103E+02	0.206E+10	0.147E-01	0.304E+08
-0.500E-02	0.183E+02	0.950E+01	0.200E+10	0.141E-01	0.281E+08
-0.300E-02	0.180E+02	0.925E+01	0.192E+10	0.142E-01	0.274E+08
-0.100E-02	0.178E+02	0.875E+01	0.188E+10	0.137E-01	0.259E+08
0.100E-02	0.176E+02	0.850E+01	0.184E+10	0.137E-01	0.251E+08
0.300E+02	0.173E+02	0.825E+01	0.179E+10	0.136E-01	0.244E+08
0.500E-02	0.171E-02	0.825E+01	0.173E+10	0.141E-01	0.244E+08
0.700E+02	0.168E+02	0.825E+01	0.168E+10	0.145E-01	0.243E+08
0.900E-02	0.166E+02	0.800E+01	0.163E+10	0.145E-01	0.236E+08
0.110E-03	0.164E+02	0.775E+01	0.159E+10	0.144E-01	0.228E+08
0.130E+03	0.162E+02	0.750E+01	0.155E+10	0.142E-01	0.221E+08
0.150E+03	0.159E+02	0.750E+01	0.149E+10	0.148E-01	0.221E+08
0.170E+03	0.156E+02	0.775E+01	0.145E+10	0.157E-01	0.228E+08
0.190E+03	0.154E+02	0.800E+01	0.141E+10	0.167E-01	0.235E+08
0.210E+03	0.151E+02	0.875E+01	0.134E+10	0.191E-01	0.257E+08
0.230E-03	0.148E+02	0.975E+01	0.129E+10	0.222E-01	0.286E+08
0.250E+03	0.144E+02	0.115E+02	0.122E+10	0.276E-01	0.336E+08
0.270E+03	0.138E+02	0.125E+02	0.111E+10	0.328E-01	0.365E+08
0.286E+03	0.131E+02	0.135E+02	0.995E+09	0.393E-01	0.392E+08
0.294E+03	0.124E+02	0.140E+02	0.894E+09	0.453E-01	0.405E+08
0.298E-03	0.117E+02	0.135E+02	0.790E+09	0.492E-01	0.389E+08
0.302E-03	0.106E+02	0.128E+02	0.648E+09	0.561E-01	0.364E+08
0.304E-03	0.101E+02	0.123E+02	0.578E+09	0.600E-01	0.347E+08
0.306E-03	0.896E+01	0.123E+02	0.451E+09	0.756E-01	0.341E+08
0.308E-03	0.832E+01	0.115E+02	0.384E+09	0.823E-01	0.316E+08
0.310E+03	0.771E+01	0.113E+02	0.324E+09	0.938E-01	0.304E+08
0.312E+03	0.651E+01	0.105E+02	0.221E+09	0.123E+00	0.271E+08
0.314E+03	0.545E+01	0.775E+01	0.143E+09	0.129E+00	0.185E+08
0.316E+03	0.490E+01	0.550E+01	0.109E+09	0.114E+00	0.124E+08
0.320E-03	0.463E+01	0.300E+01	0.928E+08	0.696E-01	0.646E+07
0.340E+03	0.463E+01	0.425E+01	0.928E+08	0.985E-01	0.914E+07
0.354E+03	0.441E+01	0.400E+01	0.811E+08	0.102E+00	0.827E+07
0.360E+03	0.421E+01	0.375E+01	0.707E+08	0.105E+00	0.740E+07
0.364E+03	0.405E+01	0.325E+01	0.625E+08	0.983E-01	0.614E+07
0.366E+03	0.391E+01	0.300E+01	0.558E+08	0.972E-01	0.542E+07
0.368E+03	0.379E+01	0.250E+01	0.499E+08	0.865E-01	0.432E+07
0.372E+03	0.350E+01	0.150E+01	0.372E+08	0.607E-01	0.226E+07
0.374E+03	0.339E+01	0.750E+00	0.325E+08	0.324E-01	0.105E+07

THERMID 600

7/15/82
RUN362

(L/T RATIO = 3.896)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009906 THICK=0.001630 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.453E+02	0.465E+02	0.220E+10	0.112E-01	0.246E+08
-0.100E+03	0.449E+02	0.588E+02	0.216E+10	0.144E-01	0.311E+08
-0.800E+02	0.443E+02	0.675E+02	0.210E+10	0.170E-01	0.358E+08
-0.600E+02	0.437E+02	0.638E+02	0.203E+10	0.166E-01	0.338E+08
-0.400E+02	0.433E+02	0.538E+02	0.200E+10	0.142E-01	0.285E+08
-0.200E+02	0.429E+02	0.478E+02	0.196E+10	0.129E-01	0.253E+08
0.000E+00	0.425E+02	0.435E+02	0.192E+10	0.120E-01	0.230E+08
0.200E+02	0.421E+02	0.425E+02	0.189E+10	0.119E-01	0.225E+08
0.400E+02	0.415E+02	0.505E+02	0.184E+10	0.146E-01	0.267E+08
0.600E+02	0.410E+02	0.588E+02	0.179E+10	0.174E-01	0.311E+08
0.800E+02	0.400E+02	0.730E+02	0.171E+10	0.227E-01	0.386E+08
0.100E+03	0.393E+02	0.865E+02	0.165E+10	0.278E-01	0.458E+08
0.120E+03	0.385E+02	0.970E+02	0.158E+10	0.324E-01	0.513E+08
0.140E+03	0.376E+02	0.101E+03	0.151E+10	0.353E-01	0.533E+08
0.160E+03	0.367E+02	0.101E+03	0.144E+10	0.372E-01	0.536E+08
0.180E+03	0.358E+02	0.105E+03	0.137E+10	0.405E-01	0.555E+08
0.200E+03	0.339E+02	0.180E+03	0.122E+10	0.779E-01	0.951E+08
0.208E+03	0.318E+02	0.288E+03	0.108E+10	0.141E+00	0.152E+09
0.212E+03	0.299E+02	0.306E+03	0.950E+09	0.170E+00	0.161E+09
0.216E+03	0.270E+02	0.290E+03	0.775E+09	0.197E+00	0.153E+09
0.220E+03	0.245E+02	0.276E+03	0.639E+09	0.227E+00	0.145E+09
0.222E+03	0.231E+02	0.268E+03	0.567E+09	0.248E+00	0.141E+09
0.224E+03	0.218E+02	0.254E+03	0.503E+09	0.265E+00	0.133E+09
0.226E+03	0.204E+02	0.236E+03	0.441E+09	0.280E+00	0.124E+09
0.228E+03	0.191E+02	0.212E+03	0.383E+09	0.289E+00	0.111E+09
0.230E+03	0.176E+02	0.192E+03	0.324E+09	0.308E+00	0.100E+09
0.232E+03	0.162E+02	0.168E+03	0.273E+09	0.319E+00	0.872E+08
0.234E+03	0.148E+02	0.144E+03	0.227E+09	0.327E+00	0.744E+08
0.236E+03	0.134E+02	0.136E+03	0.187E+09	0.374E+00	0.698E+08
0.238E+03	0.123E+02	0.118E+03	0.155E+09	0.389E+00	0.602E+08
0.240E+03	0.112E+02	0.106E+03	0.127E+09	0.422E+00	0.536E+08
0.242E+03	0.102E+02	0.101E+03	0.106E+09	0.477E+00	0.504E+08
0.244E+03	0.929E+01	0.940E+02	0.859E+08	0.540E+00	0.464E+08
0.246E+03	0.859E+01	0.845E+02	0.724E+08	0.568E+00	0.412E+08
0.248E+03	0.794E+01	0.698E+02	0.610E+08	0.549E+00	0.335E+08
0.250E+03	0.744E+01	0.578E+02	0.527E+08	0.518E+00	0.273E+08
0.252E+03	0.704E+01	0.483E+02	0.465E+08	0.483E+00	0.225E+08
0.254E+03	0.665E+01	0.403E+02	0.408E+08	0.451E+00	0.184E+08
0.256E+03	0.635E+01	0.338E+02	0.366E+08	0.415E+00	0.152E+08
0.258E+03	0.605E+01	0.288E+02	0.327E+08	0.390E+00	0.127E+08
0.262E+03	0.565E+01	0.213E+02	0.276E+08	0.330E+00	0.913E+07
0.266E+03	0.526E+01	0.158E+02	0.231E+08	0.282E+00	0.652E+07
0.270E+03	0.496E+01	0.120E+02	0.198E+08	0.242E+00	0.479E+07
0.274E+03	0.472E+01	0.925E+01	0.174E+08	0.205E+00	0.357E+07
0.278E+03	0.453E+01	0.700E+01	0.154E+08	0.170E+00	0.261E+07
0.282E+03	0.428E+01	0.500E+01	0.130E+08	0.136E+00	0.177E+07
0.288E+03	0.406E+01	0.250E+01	0.111E+08	0.751E-01	0.836E+06

9/7/82
RUN444

BATQ-H 2HR@200C 1HR@300C

(L/T RATIO = 4.811)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010230 THICK=0.001320 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.309E+02	0.238E+03	0.185E+10	0.619E-01	0.115E+09
-0.100E+03	0.307E+02	0.213E+03	0.183E+10	0.560E-01	0.103E+09
-0.800E+02	0.300E+02	0.190E+03	0.175E+10	0.521E-01	0.913E+08
-0.600E+02	0.295E+02	0.172E+03	0.169E+10	0.488E-01	0.826E+08
-0.400E+02	0.291E+02	0.165E+03	0.165E+10	0.480E-01	0.791E+08
-0.200E+02	0.288E+02	0.157E+03	0.161E+10	0.469E-01	0.753E+08
0.000E+00	0.285E+02	0.148E+03	0.157E+10	0.454E-01	0.713E+08
0.200E+02	0.283E+02	0.142E+03	0.155E+10	0.441E-01	0.684E+08
0.400E+02	0.280E+02	0.137E+03	0.153E+10	0.433E-01	0.660E+08
0.600E+02	0.280E+02	0.140E+03	0.151E+10	0.445E-01	0.674E+08
0.800E+02	0.278E+02	0.140E+03	0.150E+10	0.447E-01	0.672E+08
0.100E+03	0.277E+02	0.142E+03	0.149E+10	0.456E-01	0.680E+08
0.120E+03	0.275E+02	0.142E+03	0.147E+10	0.463E-01	0.681E+08
0.140E+03	0.274E+02	0.143E+03	0.145E+10	0.471E-01	0.685E+08
0.160E+03	0.272E+02	0.138E+03	0.143E+10	0.463E-01	0.662E+08
0.180E+03	0.270E+02	0.130E+03	0.141E+10	0.443E-01	0.623E+08
0.200E+03	0.265E+02	0.127E+03	0.135E+10	0.451E-01	0.611E+08
0.220E+03	0.262E+02	0.124E+03	0.133E+10	0.446E-01	0.595E+08
0.240E+03	0.259E+02	0.122E+03	0.129E+10	0.451E-01	0.583E+08
0.260E+03	0.255E+02	0.114E+03	0.126E+10	0.436E-01	0.548E+08
0.280E+03	0.246E+02	0.123E+03	0.117E+10	0.504E-01	0.590E+08
0.288E+03	0.230E+02	0.141E+03	0.102E+10	0.659E-01	0.673E+08
0.292E+03	0.210E+02	0.173E+03	0.850E+09	0.970E-01	0.824E+08
0.294E+03	0.190E+02	0.197E+03	0.693E+09	0.135E+00	0.939E+08
0.296E+03	0.175E+02	0.227E+03	0.586E+09	0.184E+00	0.108E+09
0.298E+03	0.160E+02	0.261E+03	0.488E+09	0.252E+00	0.123E+09
0.300E+03	0.146E+02	0.293E+03	0.404E+09	0.341E+00	0.138E+09
0.302E+03	0.130E+02	0.320E+03	0.318E+09	0.469E+00	0.149E+09
0.304E+03	0.116E+02	0.338E+03	0.251E+09	0.623E+00	0.156E+09
0.306E+03	0.100E+02	0.346E+03	0.183E+09	0.857E+00	0.157E+09
0.308E+03	0.870E+01	0.341E+03	0.136E+09	0.112E+01	0.152E+09
0.310E+03	0.750E+01	0.322E+03	0.979E+08	0.142E+01	0.139E+09
0.312E+03	0.650E+01	0.289E+03	0.706E+08	0.169E+01	0.120E+09
0.314E+03	0.570E+01	0.244E+03	0.515E+08	0.186E+01	0.959E+08
0.316E+03	0.510E+01	0.195E+03	0.388E+08	0.186E+01	0.723E+08
0.318E+03	0.470E+01	0.149E+03	0.312E+08	0.167E+01	0.520E+08
0.320E+03	0.430E+01	0.110E+03	0.242E+08	0.148E+01	0.357E+08
0.322E+03	0.400E+01	0.810E+02	0.193E+08	0.126E+01	0.242E+08
0.324E+03	0.380E+01	0.598E+02	0.162E+08	0.103E+01	0.167E+08
0.328E+03	0.350E+01	0.323E+02	0.120E+08	0.653E+00	0.781E+07
0.330E+03	0.340E+01	0.243E+02	0.106E+08	0.520E+00	0.552E+07
0.332E+03	0.330E+01	0.175E+02	0.931E+07	0.398E+00	0.371E+07

9/7/82
RUN450

F 178 (MX503) 1HR@350F 2HR@475F

(L/T RATIO = 3.470)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010140 THICK=0.001830 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.547E+02	0.333E+03	0.221E+10	0.276E-01	0.609E+08
-0.100E+03	0.533E+02	0.402E+03	0.209E+10	0.352E-01	0.736E+08
-0.800E+02	0.518E+02	0.406E+03	0.198E+10	0.375E-01	0.743E+08
-0.600E+02	0.506E+02	0.356E+03	0.189E+10	0.345E-01	0.651E+08
-0.400E+02	0.497E+02	0.302E+03	0.182E+10	0.303E-01	0.553E+08
-0.200E+02	0.486E+02	0.281E+03	0.174E+10	0.295E-01	0.514E+08
0.000E+00	0.477E+02	0.265E+03	0.168E+10	0.289E-01	0.485E+08
0.200E+02	0.468E+02	0.263E+03	0.162E+10	0.298E-01	0.481E+08
0.400E+02	0.457E+02	0.264E+03	0.154E+10	0.313E-01	0.483E+08
0.600E+02	0.441E+02	0.309E+03	0.143E+10	0.395E-01	0.565E+08
0.800E+02	0.428E+02	0.352E+03	0.135E+10	0.477E-01	0.644E+08
0.100E+03	0.418E+02	0.369E+03	0.129E+10	0.522E-01	0.674E+08
0.120E+03	0.408E+02	0.382E+03	0.123E+10	0.569E-01	0.698E+08
0.140E+03	0.395E+02	0.385E+03	0.115E+10	0.613E-01	0.703E+08
0.160E+03	0.386E+02	0.373E+03	0.110E+10	0.622E-01	0.682E+08
0.180E+03	0.379E+02	0.355E+03	0.105E+10	0.617E-01	0.649E+08
0.200E+03	0.366E+02	0.344E+03	0.995E+09	0.630E-01	0.627E+08
0.220E+03	0.352E+02	0.320E+03	0.911E+09	0.641E-01	0.585E+08
0.240E+03	0.339E+02	0.294E+03	0.839E+09	0.639E-01	0.536E+08
0.256E+03	0.319E+02	0.300E+03	0.746E+09	0.732E-01	0.546E+08
0.266E+03	0.301E+02	0.349E+03	0.668E+09	0.951E-01	0.635E+08
0.274E+03	0.284E+02	0.381E+03	0.593E+09	0.117E+00	0.693E+08
0.280E+03	0.266E+02	0.378E+03	0.520E+09	0.132E+00	0.687E+08
0.286E+03	0.250E+02	0.344E+03	0.457E+09	0.137E+00	0.625E+08
0.290E+03	0.235E+02	0.336E+03	0.406E+09	0.150E+00	0.609E+08
0.294E+03	0.222E+02	0.331E+03	0.360E+09	0.166E+00	0.600E+08
0.298E+03	0.209E+02	0.325E+03	0.314E+09	0.187E+00	0.587E+08
0.302E+03	0.190E+02	0.309E+03	0.264E+09	0.211E+00	0.557E+08
0.306E+03	0.172E+02	0.283E+03	0.214E+09	0.237E+00	0.508E+08
0.308E+03	0.163E+02	0.264E+03	0.191E+09	0.247E+00	0.472E+08
0.310E+03	0.152E+02	0.241E+03	0.166E+09	0.260E+00	0.430E+08
0.312E+03	0.141E+02	0.215E+03	0.144E+09	0.266E+00	0.382E+08
0.314E+03	0.130E+02	0.186E+03	0.121E+09	0.272E+00	0.328E+08
0.316E+03	0.120E+02	0.156E+03	0.101E+09	0.271E+00	0.274E+08
0.318E+03	0.109E+02	0.130E+03	0.840E+08	0.268E+00	0.225E+08
0.320E+03	0.995E+01	0.107E+03	0.687E+08	0.268E+00	0.184E+08
0.322E+03	0.907E+01	0.958E+02	0.564E+08	0.288E+00	0.163E+08
0.324E+03	0.845E+01	0.765E+02	0.483E+08	0.266E+00	0.128E+08
0.326E+03	0.782E+01	0.638E+02	0.408E+08	0.258E+00	0.105E+08
0.328E+03	0.721E+01	0.523E+02	0.340E+08	0.249E+00	0.846E+07
0.330E+03	0.670E+01	0.430E+02	0.287E+08	0.238E+00	0.681E+07
0.332E+03	0.628E+01	0.358E+02	0.246E+08	0.225E+00	0.554E+07
0.334E+03	0.579E+01	0.288E+02	0.202E+08	0.213E+00	0.431E+07
0.336E+03	0.539E+01	0.233E+02	0.169E+08	0.199E+00	0.336E+07
0.338E+03	0.500E+01	0.180E+02	0.140E+08	0.179E+00	0.249E+07
0.340E+03	0.470E+01	0.143E+02	0.118E+08	0.160E+00	0.189E+07
0.342E+03	0.440E+01	0.108E+02	0.979E+07	0.138E+00	0.135E+07
0.344E+03	0.410E+01	0.775E+01	0.790E+07	0.114E+00	0.904E+06
0.346E+03	0.389E+01	0.500E+01	0.665E+07	0.820E-01	0.545E+06
0.348E+03	0.358E+01	0.250E+01	0.492E+07	0.485E-01	0.239E+06

9/7/82
RUN438

CARBORANE SILOXANE W/1.5 PPH DICUMYL PEROXIDE

(L/T RATIO = 4.961)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009750 THICK=0.001280 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.323E+02	0.169E+03	0.233E+10	0.403E-01	0.928E+08
-0.100E+03	0.311E+02	0.239E+03	0.216E+10	0.613E-01	0.133E+09
-0.800E+02	0.297E+02	0.239E+03	0.196E+10	0.674E-01	0.132E+09
-0.640E+02	0.280E+02	0.160E+03	0.176E+10	0.505E-01	0.886E+08
-0.440E+02	0.266E+02	0.135E+03	0.158E+10	0.472E-01	0.747E+08
-0.260E+02	0.252E+02	0.123E+03	0.142E+10	0.477E-01	0.676E+08
-0.120E+02	0.237E+02	0.136E+03	0.125E+10	0.596E-01	0.747E+08
-0.400E+01	0.221E+02	0.149E+03	0.109E+10	0.755E-01	0.822E+08
0.200E+01	0.205E+02	0.153E+03	0.927E+09	0.908E-01	0.842E+08
0.600E+01	0.191E+02	0.155E+03	0.805E+09	0.106E+00	0.851E+08
0.100E+02	0.178E+02	0.156E+03	0.699E+09	0.122E+00	0.853E+08
0.140E+02	0.168E+02	0.155E+03	0.618E+09	0.137E+00	0.844E+08
0.160E+02	0.155E+02	0.151E+03	0.524E+09	0.156E+00	0.817E+08
0.180E+02	0.144E+02	0.145E+03	0.456E+09	0.172E+00	0.785E+08
0.200E+02	0.136E+02	0.141E+03	0.404E+09	0.188E+00	0.757E+08
0.240E+02	0.122E+02	0.129E+03	0.319E+09	0.216E+00	0.689E+08
0.260E+02	0.113E+02	0.122E+03	0.271E+09	0.239E+00	0.646E+08
0.280E+02	0.935E+01	0.103E+03	0.183E+09	0.293E+00	0.535E+08
0.300E+02	0.816E+01	0.863E+02	0.126E+09	0.321E+00	0.427E+08
0.320E+02	0.761E+01	0.770E+02	0.117E+09	0.329E+00	0.384E+08
0.340E+02	0.710E+01	0.695E+02	0.996E+08	0.342E+00	0.340E+08
0.360E+02	0.611E+01	0.543E+02	0.702E+08	0.360E+00	0.253E+08
0.380E+02	0.578E+01	0.468E+02	0.612E+08	0.348E+00	0.213E+08
0.400E+02	0.551E+01	0.415E+02	0.545E+08	0.339E+00	0.185E+08
0.420E+02	0.493E+01	0.348E+02	0.408E+08	0.355E+00	0.145E+08
0.440E+02	0.431E+01	0.260E+02	0.280E+08	0.347E+00	0.972E+07
0.460E+02	0.400E+01	0.248E+02	0.222E+08	0.384E+00	0.851E+07
0.480E+02	0.379E+01	0.235E+02	0.185E+08	0.406E+00	0.750E+07
0.520E+02	0.359E+01	0.218E+02	0.152E+08	0.419E+00	0.636E+07
0.540E+02	0.338E+01	0.198E+02	0.118E+08	0.430E+00	0.509E+07
0.560E+02	0.329E+01	0.175E+02	0.105E+08	0.402E+00	0.422E+07
0.580E+02	0.316E+01	0.163E+02	0.871E+07	0.403E+00	0.351E+07
0.620E+02	0.309E+01	0.140E+02	0.767E+07	0.364E+00	0.279E+07
0.660E+02	0.300E+01	0.118E+02	0.646E+07	0.324E+00	0.209E+07
0.680E+02	0.289E+01	0.103E+02	0.498E+07	0.305E+00	0.152E+07
0.720E+02	0.279E+01	0.850E+01	0.369E+07	0.271E+00	0.100E+07
0.740E+02	0.275E+01	0.750E+01	0.323E+07	0.246E+00	0.794E+06
0.780E+02	0.269E+01	0.575E+01	0.247E+07	0.197E+00	0.488E+06
0.840E+02	0.264E+01	0.375E+01	0.187E+07	0.134E+00	0.250E+06
0.860E+02	0.259E+01	0.225E+01	0.129E+07	0.833E-01	0.107E+06

9/7/82
RUN540

P1700 AGED100HR@250C

(L/T RATIO = 4 669)

SAMPLE DIMENSIONS

LENGTH=0 006350 WIDTH=0 008100 THICK=0 001360 CSC AMP=0 10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0 120E+03	0. 289E+02	0 100E+03	0 187E+10	0 297E-01	0 555E+08
-0 100E+03	0 278E+02	0 102E+03	0 173E+10	0 327E-01	0. 566E+08
-0 800E+02	0. 269E+02	0 103E+03	0. 162E+10	0. 353E-01	0 571E+08
-0. 600E+02	0. 263E+02	0. 910E+02	0. 155E+10	0. 327E-01	0 505E+08
-0 400E+02	0. 259E+02	0. 790E+02	0. 150E+10	0. 292E-01	0. 438E+08
-0. 200E+02	0. 256E+02	0 670E+02	0 146E+10	0. 254E-01	0. 371E+08
0. 000E+00	0. 255E+02	0 550E+02	0. 145E+10	0. 210E-01	0. 305E+08
0. 200E+02	0. 254E+02	0 430E+02	0 144E+10	0. 165E-01	0 238E+08
0 400E+02	0 253E+02	0. 363E+02	0 143E+10	0. 141E-01	0 201E+08
0 600E+02	0 251E+02	0 363E+02	0. 141E+10	0. 143E-01	0. 201E+08
0 800E+02	0 250E+02	0 363E+02	0. 140E+10	0. 144E-01	0. 201E+08
0. 100E+03	0. 249E+02	0 370E+02	0. 138E+10	0. 148E-01	0. 205E+08
0 120E+03	0. 248E+02	0 385E+02	0. 137E+10	0. 156E-01	0. 213E+08
0 140E+03	0. 246E+02	0 413E+02	0. 135E+10	0 169E-01	0. 228E+08
0 160E+03	0 244E+02	0. 543E+02	0. 133E+10	0. 226E-01	0. 300E+08
0 180E+03	0. 227E+02	0. 106E+03	0. 115E+10	0. 511E-01	0 587E+08
0 184E+03	0. 213E+02	0 149E+03	0. 101E+10	0. 813E-01	0. 821E+08
0. 188E+03	0. 189E+02	0. 228E+03	0. 791E+09	0. 158E+00	0. 125E+09
0. 190E+03	0. 169E+02	0. 287E+03	0. 623E+09	0. 252E+00	0. 157E+09
0. 192E+03	0 148E+02	0 346E+03	0. 477E+09	0 394E+00	0. 188E+09
0 194E+03	0 116E+02	0 389E+03	0 291E+09	0 714E+00	0 208E+09
0 196E+03	0. 759E+01	0 307E+03	0. 116E+09	0 132E+01	0 153E+09
0 198E+03	0. 500E+01	0 149E+03	0. 426E+08	0 148E+01	0. 628E+08
0 200E+03	0. 369E+01	0. 620E+02	0. 169E+08	0. 113E+01	0. 191E+08
0 202E+03	0. 296E+01	0 218E+02	0. 599E+07	0. 614E+00	0. 368E+07

10/29/82
RUN562

P1701 AGED 100 HRS AT 300 C

(L/T RATIO = 5.248)

SAMPLE DIMENSIONS
LENGTH=0.06350 WIDTH=0.008460 THICK=0.001210 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.253E+02	0.763E+02	0.202E+10	0.284E-01	0.575E+08
-0.100E+03	0.249E+02	0.815E+02	0.188E+10	0.326E-01	0.614E+08
-0.800E+02	0.242E+02	0.705E+02	0.178E+10	0.299E-01	0.531E+08
-0.600E+02	0.237E+02	0.560E+02	0.170E+10	0.248E-01	0.421E+08
-0.400E+02	0.233E+02	0.463E+02	0.164E+10	0.212E-01	0.348E+08
-0.200E+02	0.230E+02	0.398E+02	0.160E+10	0.187E-01	0.299E+08
0.000E+00	0.228E+02	0.348E+02	0.157E+10	0.166E-01	0.261E+08
0.200E+02	0.226E+02	0.313E+02	0.155E+10	0.152E-01	0.235E+08
0.400E+02	0.224E+02	0.293E+02	0.152E+10	0.145E-01	0.220E+08
0.600E+02	0.223E+02	0.290E+02	0.150E+10	0.145E-01	0.218E+08
0.800E+02	0.222E+02	0.280E+02	0.149E+10	0.141E-01	0.210E+08
0.100E+03	0.219E+02	0.273E+02	0.145E+10	0.141E-01	0.205E+08
0.120E+03	0.216E+02	0.293E+02	0.142E+10	0.155E-01	0.220E+08
0.140E+03	0.212E+02	0.335E+02	0.137E+10	0.183E-01	0.251E+08
0.158E+03	0.202E+02	0.423E+02	0.123E+10	0.257E-01	0.317E+08
0.168E+03	0.191E+02	0.470E+02	0.110E+10	0.319E-01	0.351E+08
0.180E+03	0.180E+02	0.675E+02	0.972E+09	0.515E-01	0.504E+08
0.184E+03	0.171E+02	0.101E+03	0.879E+09	0.853E-01	0.750E+08
0.188E+03	0.156E+02	0.200E+03	0.723E+09	0.205E+00	0.148E+09
0.190E+03	0.142E+02	0.240E+03	0.602E+09	0.294E+00	0.177E+09
0.192E+03	0.124E+02	0.284E+03	0.453E+09	0.458E+00	0.207E+09
0.194E+03	0.998E+01	0.284E+03	0.286E+09	0.708E+00	0.203E+09
0.196E+03	0.768E+01	0.220E+03	0.162E+09	0.926E+00	0.150E+09
0.198E+03	0.632E+01	0.140E+03	0.104E+09	0.868E+00	0.902E+08
0.200E+03	0.545E+01	0.648E+02	0.723E+08	0.541E+00	0.391E+08
0.202E+03	0.494E+01	0.378E+02	0.560E+08	0.384E+00	0.215E+08
0.204E+03	0.456E+01	0.238E+02	0.451E+08	0.283E+00	0.127E+08
0.206E+03	0.435E+01	0.160E+02	0.392E+08	0.210E+00	0.823E+07
0.208E+03	0.414E+01	0.118E+02	0.337E+08	0.170E+00	0.574E+07
0.210E+03	0.400E+01	0.900E+01	0.303E+08	0.139E+00	0.422E+07
0.220E+03	0.384E+01	0.725E+01	0.264E+08	0.122E+00	0.322E+07
0.224E+03	0.363E+01	0.525E+01	0.215E+08	0.991E-01	0.213E+07
0.226E+03	0.353E+01	0.475E+01	0.193E+08	0.948E-01	0.183E+07
0.232E+03	0.334E+01	0.350E+01	0.154E+08	0.779E-01	0.120E+07
0.234E+03	0.324E+01	0.300E+01	0.133E+08	0.710E-01	0.948E+06
0.236E+03	0.315E+01	0.275E+01	0.116E+08	0.687E-01	0.800E+06
0.240E+03	0.304E+01	0.225E+01	0.950E+07	0.605E-01	0.575E+06
0.242E+03	0.296E+01	0.200E+01	0.814E+07	0.565E-01	0.460E+06
0.246E+03	0.286E+01	0.125E+01	0.633E+07	0.378E-01	0.240E+06
0.248E+03	0.275E+01	0.750E+00	0.441E+07	0.246E-01	0.108E+06

11/2/82
RUN584

P1700 AGED500HRS@300C

(L/T RATIO = 7. 135)

SAMPLE DIMENSIONS

LENGTH=0. 006350 WIDTH=0. 006640 THICK=0. 000890 OSC AMP=0. 10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0. 134E+02	0. 175E+02	0. 170E+10	0. 242E-01	0. 412E+08
-0. 100E+03	0. 130E+02	0. 188E+02	0. 160E+10	0. 276E-01	0 440E+08
-0. 800E+02	0. 125E+02	0. 158E+02	0. 147E+10	0. 251E-01	0. 368E+08
-0. 600E+02	0. 122E+02	0. 125E+02	0. 140E+10	0. 208E-01	0. 292E+08
-0. 400E+02	0. 120E+02	0. 105E+02	0. 135E+10	0. 181E-01	0. 245E+08
-0. 200E+02	0. 118E+02	0. 970E+01	0. 131E+10	0. 172E-01	0. 226E+08
0. 000E+00	0. 117E+02	0. 850E+01	0. 129E+10	0. 153E-01	0. 198E+08
0. 200E+02	0. 116E+02	0. 675E+01	0 127E+10	0. 124E-01	0. 157E+08
0. 400E+02	0. 116E+02	0. 625E+01	0 127E+10	0. 115E-01	0. 145E+08
0. 600E+02	0. 115E+02	0. 575E+01	0. 124E+10	0. 107E-01	0. 134E+08
0. 800E+02	0. 114E+02	0. 600E+01	0. 122E+10	0. 114E-01	0. 139E+08
0. 100E+03	0. 113E+02	0. 575E+01	0. 120E+10	0. 111E-01	0. 133E+08
0. 120E+03	0. 113E+02	0. 575E+01	0. 120E+10	0. 111E-01	0. 133E+08
0. 140E+03	0. 112E+02	0. 575E+01	0. 118E+10	0. 113E-01	0. 133E+08
0. 1[illegible]0E+03	0. 111E+02	0. 875E+01	0 114E+10	0. 177E-01	0. 202E+08
0. 176E+03	0. 105E+02	0. 145E+02	0 102E+10	0. 326E-01	0. 333E+08
0. 188E+03	0. 990E+01	0. 620E+02	0. 902E+09	0. 157E+00	0. 142E+09
0. 192E+03	0. 893E+01	0. 102E+03	0. 722E+09	0. 316E+00	0. 228E+09
0. 194E+03	0. 776E+01	0. 112E+03	0. 531E+09	0. 462E+00	0. 246E+09
0. 196E+03	0. 628E+01	0. 993E+02	0 327E+09	0. 625E+00	0 204E+09
0 198E+03	0. 514E+01	0. 698E+02	0. 199E+09	0. 655E+00	0. 130E+09
0. 200E+03	0. 435E+01	0. 440E+02	0. 126E+09	0. 577E+00	0. 725E+08
0. 202E+03	0. 375E+01	0. 280E+02	0. 779E+08	0. 494E+00	0. 385E+08
0. 204E+03	0. 334E+01	0. 190E+02	0. 493E+08	0. 423E+00	0. 208E+08
0. 206E+03	0. 315E+01	0. 150E+02	0. 373E+08	0. 375E+00	0. 140E+08
0. 208E+03	0. 303E+01	0. 145E+02	0. 297E+08	0. 393E+00	0. 117E+08

10/29/92
RUN573

AETREL 3a1 100HRS @ 300C

(L/T RATIO = 4.071)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.006480 THICK=0.001560 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.281E+02	0.126E+03	0.147E+10	0.394E-01	0.578E+08
-0.100E+03	0.275E+02	0.100E+03	0.140E+10	0.327E-01	0.460E+08
-0.800E+02	0.269E+02	0.713E+02	0.134E+10	0.244E-01	0.327E+08
-0.600E+02	0.265E+02	0.600E+02	0.130E+10	0.213E-01	0.276E+08
-0.400E+02	0.261E+02	0.553E+02	0.126E+10	0.201E-01	0.254E+08
-0.200E+02	0.258E+02	0.480E+02	0.123E+10	0.179E-01	0.220E+08
0.000E+00	0.254E+02	0.463E+02	0.120E+10	0.177E-01	0.212E+08
0.200E+02	0.252E+02	0.460E+02	0.118E+10	0.180E-01	0.211E+08
0.400E+02	0.251E+02	0.465E+02	0.116E+10	0.184E-01	0.213E+08
0.600E+02	0.249E+02	0.468E+02	0.114E+10	0.188E-01	0.214E+08
0.800E+02	0.248E+02	0.473E+02	0.113E+10	0.191E-01	0.217E+08
0.100E+03	0.246E+02	0.470E+02	0.112E+10	0.192E-01	0.216E+08
0.120E+03	0.245E+02	0.473E+02	0.111E+10	0.194E-01	0.217E+08
0.140E+03	0.245E+02	0.475E+02	0.111E+10	0.196E-01	0.218E+08
0.160E+03	0.245E+02	0.475E+02	0.111E+10	0.196E-01	0.218E+08
0.180E+03	0.245E+02	0.477E+02	0.111E+10	0.197E-01	0.219E+08
0.200E+03	0.245E+02	0.489E+02	0.111E+10	0.202E-01	0.224E+08
0.220E+03	0.245E+02	0.574E+02	0.111E+10	0.237E-01	0.263E+08
0.240E+03	0.245E+02	0.702E+02	0.111E+10	0.290E-01	0.322E+08
0.260E+03	0.244E+02	0.103E+03	0.110E+10	0.426E-01	0.470E+08
0.272E+03	0.227E+02	0.155E+03	0.951E+09	0.745E-01	0.709E+08
0.278E+03	0.205E+02	0.206E+03	0.773E+09	0.121E+00	0.938E+08
0.280E+03	0.193E+02	0.202E+03	0.682E+09	0.135E+00	0.918E+08
0.282E+03	0.178E+02	0.189E+03	0.583E+09	0.147E+00	0.855E+08
0.284E+03	0.165E+02	0.177E+03	0.494E+09	0.162E+00	0.799E+08
0.286E+03	0.153E+02	0.182E+03	0.425E+09	0.193E+00	0.819E+08
0.288E+03	0.141E+02	0.199E+03	0.359E+09	0.249E+00	0.894E+08
0.290E+03	0.130E+02	0.217E+03	0.306E+09	0.318E+00	0.970E+08
0.292E+03	0.119E+02	0.228E+03	0.251E+09	0.403E+00	0.101E+09
0.294E+03	0.103E+02	0.228E+03	0.188E+09	0.530E+00	0.997E+08
0.296E+03	864E+01	0.207E+03	0.128E+09	0.688E+00	0.880E+08
0.298E+03	0.718E+01	0.168E+03	0.347E+08	0.807E+00	0.564E+08
0.300E+03	0.597E+01	0.120E+03	0.553E+08	0.832E+00	0.460E+08
0.302E+03	0.507E+01	0.775E+02	0.367E+08	0.746E+00	0.274E+08
0.304E+03	0.456E+01	0.493E+02	0.275E+08	0.597E+00	0.161E+08
0.306E+03	0.406E+01	0.290E+02	0.194E+08	0.436E+00	0.845E+07
0.308E+03	0.376E+01	0.155E+02	0.150E+08	0.272E+00	0.407E+07
0.310E+03	0.349E+01	0.625E+01	0.113E+08	0.127E+00	0.144E+07

11/2/82
RUN575

ASTREL 360 AGED 500HR@300C

(L/T RATIO = 3. 528)

SAMPLE DIMENSIONS

LENGTH=0. 006350 WIDTH=0. 005010 THICK=0. 001800 OSC AMP=0. 10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0. 335E+02	0. 240E+03	0. 176E+10	0. 530E-01	0. 931E+08
-0. 100E+03	0. 322E+02	0. 245E+03	0. 162E+10	0. 586E-01	0. 951E+08
-0. 800E+02	0. 314E+02	0. 191E+03	0. 155E+10	0. 479E-01	0. 740E+08
-0. 600E+02	0. 310E+02	0. 162E+03	0. 150E+10	0. 420E-01	0. 629E+08
-0. 400E+02	0. 305E+02	0. 137E+03	0. 146E+10	0. 365E-01	0. 532E+08
-0. 200E+02	0. 303E+02	0. 120E+03	0. 143E+10	0. 326E-01	0. 466E+08
0. 000E+00	0. 299E+02	0. 107E+03	0. 140E+10	0. 296E-01	0. 413E+08
0. 200E+02	0. 297E+02	0. 950E+02	0. 138E+10	0. 267E-01	0. 368E+08
0. 400E+02	0. 294E+02	0. 868E+02	0. 135E+10	0. 249E-01	0 336E+08
0. 600E+02	0. 293E+02	0. 814E+02	0. 134E+10	0. 235E-01	0. 315E+08
0. 800E+02	0. 292E+02	0. 787E+02	0. 133E+10	0. 228E-01	0. 305E+08
0. 100E+03	0. 291E+02	0. 787E+02	0. 132E+10	0. 230E-01	0. 305E+08
0. 120E+03	0. 288E+02	0. 787E+02	0. 130E+10	0. 235E-01	0. 305E+08
0. 140E+03	0. 287E+02	0. 729E+02	0. 128E+10	0. 220E-01	0. 282E+08
0. 160E+03	0. 285E+02	0. 694E+02	0. 127E+10	0. 212E-01	0. 269E+08
0. 180E+03	0. 284E+02	0. 694E+02	0. 126E+10	0. 213E-01	0. 269E+08
0. 200E+03	0. 284E+02	0. 682E+02	0. 126E+10	0. 209E-01	0. 264E+08
0. 220E+03	0. 283E+02	0. 672E+02	0. 125E+10	0. 208E-01	0. 260E+08
0. 240E+03	0. 283E+02	0. 772E+02	0. 125E+10	0. 239E-01	0. 299E+08
0. 260E+03	0. 283E+02	0. 927E+02	0. 125E+10	0. 287E-01	0. 359E+08
0. 280E+03	0. 279E+02	0. 147E+03	0. 121E+10	0. 469E-01	0. 568E+08
0. 284E+03	0. 263E+02	0. 192E+03	0. 108E+10	0. 691E-01	0. 744E+08
0. 286E+03	0. 249E+02	0. 235E+03	0. 967E+09	0. 939E-01	0. 908E+08
0. 288E+03	0. 236E+02	0. 282E+03	0. 868E+09	0. 125E+00	0. 109E+09
0. 290E+03	0. 223E+02	0. 363E+03	0. 775E+09	0. 180E+00	0. 140E+09
0. 292E+03	0. 208E+02	0. 375E+03	0. 669E+09	0. 215E+00	0 144E+09
0. 294E+03	0. 191E+02	0. 386E+03	0. 567E+09	0. 262E+00	0 148E+09
0. 296E+03	0. 176E+02	0. 411E+03	0. 478E+09	0. 329E+00	0. 157E+09
0. 298E+03	0. 159E+02	0. 430E+03	0. 391E+09	0. 420E+00	0. 164E+09
0. 300E+03	0. 141E+02	0. 435E+03	0. 304E+09	0. 540E+00	0. 164E+09
0. 302E+03	0. 123E+02	0. 409E+03	0. 227E+09	0. 673E+00	0. 153E+09
0. 304E+03	0. 104E+02	0. 349E+03	0. 162E+09	0. 792E+00	0. 128E+09
0. 306E+03	0. 836E+01	0. 256E+03	0. 100E+09	0. 909E+00	0. 913E+08
0. 308E+03	0. 697E+01	0. 168E+03	0. 669E+08	0. 856E+00	0. 573E+08
0. 310E+03	0. 588E+01	0. 959E+02	0 447E+08	0. 689E+00	0. 308E+08
0. 312E+03	0. 514E+01	0. 497E+02	0. 319E+08	0. 467E+00	0. 149E+08
0. 314E+03	0. 457E+01	0. 217E+02	0. 233E+08	0. 257E+00	0. 599E+07
0. 316E+03	0. 415E+01	0 134E+02	0. 175E+08	0. 194E+00	0. 338E+07
0. 318E+03	0. 385E+01	0. 103E+02	0. 137E+08	0. 172E+00	0. 236E+07
0. 320E+03	0. 354E+01	0. 905E+01	0. 100E+08	0. 179E+00	0. 180E+07
0. 322E+03	0. 334E+01	0. 880E+01	0. 789E+07	0 196E+00	0 155E+07
0. 324E+03	0. 315E+01	0. 680E+01	0. 597E+07	0. 170E+00	0. 102E+07
0. 326E+03	0. 304E+01	0. 505E+01	0. 487E+07	0. 136E+00	0 662E+06
0. 328E+03	0. 286E+01	0. 330E+01	0. 325E+07	0 999E-01	0. 325E+06

11/2/82
RUN602

ASTREL 360

(L/T RATIO = 5.336)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010960 THICK=0.001190 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.283E+02	0.106E+03	0.198E+10	0.329E-01	0.651E+08
-0.100E+03	0.279E+02	0.100E+03	0.192E+10	0.319E-01	0.612E+08
-0.800E+02	0.277E+02	0.960E+02	0.189E+10	0.311E-01	0.588E+08
-0.600E+02	0.274E+02	0.925E+02	0.185E+10	0.306E-01	0.566E+08
-0.400E+02	0.272E+02	0.898E+02	0.182E+10	0.302E-01	0.550E+08
-0.200E+02	0.269E+02	0.877E+02	0.179E+10	0.300E-01	0.537E+08
0.000E+00	0.267E+02	0.854E+02	0.176E+10	0.297E-01	0.523E+08
0.200E+02	0.264E+02	0.829E+02	0.172E+10	0.295E-01	0.507E+08
0.400E+02	0.262E+02	0.805E+02	0.169E+10	0.291E-01	0.492E+08
0.600E+02	0.259E+02	0.795E+02	0.165E+10	0.294E-01	0.486E+08
0.800E+02	0.257E+02	0.788E+02	0.163E+10	0.296E-01	0.482E+08
0.100E+03	0.254E+02	0.775E+02	0.159E+10	0.298E-01	0.474E+08
0.120E+03	0.252E+02	0.758E+02	0.157E+10	0.296E-01	0.463E+08
0.140E+03	0.250E+02	0.733E+02	0.154E+10	0.290E-01	0.448E+08
0.160E+03	0.249E+02	0.700E+02	0.153E+10	0.280E-01	0.428E+08
0.180E+03	0.248E+02	0.675E+02	0.152E+10	0.272E-01	0.412E+08
0.200E+03	0.248E+02	0.648E+02	0.151E+10	0.262E-01	0.396E+08
0.220E+03	0.247E+02	0.646E+02	0.150E+10	0.263E-01	0.395E+08
0.240E+03	0.243E+02	0.662E+02	0.146E+10	0.277E-01	0.404E+08
0.260E+03	0.241E+02	0.730E+02	0.143E+10	0.312E-01	0.446E+08
0.280E+03	0.234E+02	0.104E+03	0.135E+10	0.474E-01	0.637E+08
0.296E+03	0.219E+02	0.642E+03	0.118E+10	0.332E+00	0.391E+09
0.300E+03	0.207E+02	0.919E+03	0.105E+10	0.531E+00	0.559E+09
0.302E+03	0.184E+02	0.102E+04	0.827E+09	0.747E+00	0.618E+09
0.304E+03	0.151E+02	0.971E+03	0.549E+09	0.106E+01	0.583E+09
0.306E+03	0.114E+02	0.775E+03	0.309E+09	0.148E+01	0.456E+09
0.308E+03	0.835E+01	0.497E+03	0.158E+09	0.177E+01	0.280E+09
0.310E+03	0.678E+01	0.293E+03	0.990E+08	0.158E+01	0.157E+09
0.312E+03	0.478E+01	0.111E+03	0.416E+08	0.120E+01	0.499E+08
0.314E+03	0.278E+01	0.479E+02	0.399E+07	0.154E+01	0.613E+07
0.316E+03	0.252E+01	0.432E+01	0.609E+06	0.168E+00	0.102E+06

11/2/82
RUN574

ASTREL 360 100HRS @ 250C

(L/T RATIO = 5.474)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009310 THICK=0.001160 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.299E+02	0.202E+03	0.281E+10	0.560E-01	0.157E+09
-0.100E+03	0.290E+02	0.153E+03	0.264E+10	0.450E-01	0.119E+09
-0.800E+02	0.282E+02	0.110E+03	0.250E+10	0.343E-01	0.858E+08
-0.600E+02	0.275E+02	0.843E+02	0.237E+10	0.276E-01	0.655E+08
-0.400E+02	0.271E+02	0.758E+02	0.230E+10	0.256E-01	0.589E+08
-0.200E+02	0.268E+02	0.693E+02	0.225E+10	0.239E-01	0.539E+08
0.000E+00	0.265E+02	0.668E+02	0.220E+10	0.235E-01	0.519E+08
0.200E+02	0.263E+02	0.668E+02	0.217E+10	0.240E-01	0.519E+08
0.400E+02	0.262E+02	0.658E+02	0.215E+10	0.238E-01	0.511E+08
0.600E+02	0.261E+02	0.643E+02	0.213E+10	0.234E-01	0.499E+08
0.800E+02	0.259E+02	0.625E+02	0.210E+10	0.231E-01	0.486E+08
0.100E+03	0.258E+02	0.603E+02	0.209E+10	0.224E-01	0.468E+08
0.120E+03	0.257E+02	0.583E+02	0.207E+10	0.219E-01	0.453E+08
0.140E+03	0.256E+02	0.568E+02	0.205E+10	0.215E-01	0.441E+08
0.160E+03	0.254E+02	0.560E+02	0.202E+10	0.216E-01	0.435E+08
0.180E+03	0.253E+02	0.550E+02	0.200E+10	0.213E-01	0.427E+08
0.200E+03	0.251E+02	0.550E+02	0.197E+10	0.217E-01	0.427E+08
0.220E+03	0.250E+02	0.555E+02	0.195E+10	0.221E-01	0.431E+08
0.240E+03	0.248E+02	0.558E+02	0.193E+10	0.225E-01	0.433E+08
0.260E+03	0.243E+02	0.575E+02	0.185E+10	0.241E-01	0.446E+08
0.270E+03	0.229E+02	0.680E+02	0.165E+10	0.320E-01	0.527E+08
0.278E+03	0.217E+02	0.141E+03	0.147E+10	0.743E-01	0.109E+09
0.284E+03	0.203E+02	0.326E+03	0.129E+10	0.196E+00	0.252E+09
0.290E+03	0.192E+02	0.586E+03	0.115E+10	0.394E+00	0.452E+09
0.292E+03	0.182E+02	0.688E+03	0.103E+10	0.516E+00	0.530E+09
0.294E+03	0.164E+02	0.757E+03	0.830E+09	0.699E+00	0.580E+09
0.296E+03	0.141E+02	0.753E+03	0.606E+09	0.944E+00	0.572E+09
0.298E+03	0.113E+02	0.647E+03	0.384E+09	0.126E+01	0.483E+09
0.300E+03	0.850E+01	0.447E+03	0.209E+09	0.154E+01	0.321E+09
0.302E+03	0.680E+01	0.281E+03	0.127E+09	0.151E+01	0.191E+09
0.304E+03	0.588E+01	0.176E+03	0.898E+08	0.126E+01	0.114E+09
0.306E+03	0.528E+01	0.112E+03	0.686E+08	0.100E+01	0.687E+08
0.308E+03	0.488E+01	0.763E+02	0.558E+08	0.796E+00	0.444E+08
0.312E+03	0.449E+01	0.408E+02	0.443E+08	0.502E+00	0.222E+08
0.316E+03	0.429E+01	0.265E+02	0.388E+08	0.358E+00	0.139E+08
0.320E+03	0.409E+01	0.215E+02	0.335E+08	0.319E+00	0.107E+08
0.328E+03	0.389E+01	0.230E+02	0.284E+08	0.377E+00	0.107E+08
0.330E+03	0.376E+01	0.218E+02	0.254E+08	0.381E+00	0.968E+07
0.332E+03	0.358E+01	0.205E+02	0.211E+08	0.398E+00	0.837E+07
0.334E+03	0.347E+01	0.188E+02	0.188E+08	0.385E+00	0.725E+07
0.336E+03	0.326E+01	0.168E+02	0.143E+08	0.390E+00	0.558E+07
0.338E+03	0.306E+01	0.148E+02	0.103E+08	0.390E+00	0.402E+07
0.340E+03	0.285E+01	0.120E+02	0.632E+07	0.366E+00	0.231E+07
0.342E+03	0.267E+01	0.825E+01	0.326E+07	0.286E+00	0.931E+06
0.344E+03	0.255E+01	0.350E+01	0.119E+07	0.133E+00	0.159E+06

200F

(L/T RATIO = 17 162)

SAMPLE DIMENSIONS
LENGTH=0 019050 WIDTH=0 003700 THICK=0 001110 OSC AMP=0 10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0 120E+03	0.859E+01	0 975E+01	0.742E+10	0 328E-01	0 243E+09
-0 100E+03	0 827E+01	0 500E+01	0 684E+10	0 181E-01	0.124E+09
-0 800E+02	0.810E+01	0 300E+01	0.653E+10	0 113E-01	0 740E+08
-0 600E+02	0 797E+01	0 250E+01	0 631E+10	0 975E-02	0 615E+08
-0 400E+02	0.781E+01	0 200E+01	0.603E+10	0 812E-02	0 490E+08
-0 200E+02	0.772E+01	0 175E+01	0 588E+10	0 727E-02	0 427E+08
0 000E+00	0 765E+01	0 150E+01	0 575E+10	0 636E-02	0 365E+08
0 200E+02	0 755E+01	0.125E+01	0 558E+10	0 544E-02	0 304E+08
0 400E+02	0 746E+01	0 100E+01	0 544E+10	0 445E-02	0 242E+08
0 600E+02	0.744E+01	0.750E+00	0.540E+10	0 336E-02	0.181E+08
0 800E+02	0.744E+01	0.500E+00	0.540E+10	0 224E-02	0 121E+08
0 100E+03	0.734E+01	0.500E+00	0.524E+10	0.230E-02	0.121E+08
0.120E+03	0 734E+01	0.500E+00	0 524E+10	0 230E-02	0 121E+08
0 140E+03	0.734E+01	0.500E+00	0 524E+10	0.230E-02	0 121E+08
0 160E+03	0.724E+01	0.500E+00	0 508E+10	0 237E-02	0.120E+08
0 180E+03	0.724E+01	0.750E+00	0 508E+10	0 355E-02	0 180E+08
0 200E+03	0 716E+01	0.150E+01	0 495E+10	0 726E-02	0 359E+08
0 220E+03	0 695E+01	0 105E+02	0 463E+10	0 539E-01	0 249E+09
0 224E+03	0 657E+01	0 220E+02	0 407E+10	0 126E+00	0 514E+09
0 226E+03	0 626E+01	0.310E+02	0 363E+10	0 196E+00	0 712E+09
0 228E+03	0 586E+01	0 390E+02	0 310E+10	0 221E+00	0 872E+09
0.230E+03	0 516E+01	0 465E+02	0 225E+10	0 433E+00	0 974E+09
0 232E+03	0 426E+01	0 460E+02	0 132E+10	0 628E+00	0 829E+09
0.234E+03	0 325E+01	0.323E+02	0 487E+09	0 757E+00	0 369E+09
0 236E+03	0.248E+01	0 143E+02	0 271E+07	0 575E+00	0 1[illegible]6E+07

9/7/82
RUN539

200P AGED 100HR@250C

(L/T RATIO = 5.205)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010000 THICK=0.001220 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.281E+02	0.150E+03	0.199E+10	0.471E-01	0.934E+08
-0.100E+03	0.270E+02	0.148E+03	0.183E+10	0.505E-01	0.923E+08
-0.800E+02	0.260E+02	0.106E+03	0.169E+10	0.387E-01	0.656E+08
-0.600E+02	0.255E+02	0.845E+02	0.162E+10	0.324E-01	0.525E+08
-0.400E+02	0.250E+02	0.715E+02	0.157E+10	0.283E-01	0.444E+08
-0.200E+02	0.246E+02	0.570E+02	0.152E+10	0.234E-01	0.354E+08
0.000E+00	0.245E+02	0.530E+02	0.150E+10	0.219E-01	0.329E+08
0.200E+02	0.244E+02	0.490E+02	0.149E+10	0.204E-01	0.304E+08
0.400E+02	0.243E+02	0.483E+02	0.148E+10	0.202E-01	0.300E+08
0.600E+02	0.240E+02	0.480E+02	0.144E+10	0.207E-01	0.298E+08
0.800E+02	0.242E+02	0.480E+02	0.147E+10	0.203E-01	0.298E+08
0.100E+03	0.240E+02	0.485E+02	0.144E+10	0.209E-01	0.301E+08
0.120E+03	0.238E+02	0.490E+02	0.142E+10	0.215E-01	0.304E+08
0.140E+03	0.234E+02	0.520E+02	0.137E+10	0.235E-01	0.323E+08
0.160E+03	0.226E+02	0.528E+02	0.128E+10	0.256E-01	0.327E+08
0.178E+03	0.214E+02	0.565E+02	0.114E+10	0.306E-01	0.350E+08
0.196E+03	0.203E+02	0.610E+02	0.103E+10	0.368E-01	0.377E+08
0.204E+03	0.190E+02	0.630E+02	0.900E+09	0.432E-01	0.389E+08
0.208E+03	0.180E+02	0.640E+02	0.807E+09	0.488E-01	0.394E+08
0.214E+03	0.167E+02	0.121E+03	0.693E+09	0.107E+00	0.743E+08
0.218E+03	0.149E+02	0.185E+03	0.543E+09	0.208E+00	0.113E+09
0.220E+03	0.132E+02	0.224E+03	0.428E+09	0.317E+00	0.136E+09
0.222E+03	0.115E+02	0.257E+03	0.321E+09	0.479E+00	0.154E+09
0.224E+03	0.915E+01	0.264E+03	0.176E+09	0.783E+00	0.154E+09
0.226E+03	0.660E+01	0.213E+03	0.948E+08	0.121E+01	0.115E+09
0.228E+03	0.454E+01	0.116E+03	0.366E+08	0.139E+01	0.510E+08
0.230E+03	0.346E+01	0.545E+02	0.149E+08	0.113E+01	0.167E+08
0.232E+03	0.280E+01	0.233E+02	0.434E+07	0.735E+00	0.319E+07

10/29/82
RUN544

200P AGED 100HR@300C

(L/T RATIO = 3.713)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.008090 THICK=0.001710 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.100E+03	0.352E+02	0.196E+03	0.140E+10	0.393E-01	0.550E+08
-0.800E+02	0.341E+02	0.195E+03	0.131E+10	0.417E-01	0.548E+08
-0.600E+02	0.334E+02	0.117E+03	0.126E+10	0.261E-01	0.328E+08
-0.400E+02	0.327E+02	0.112E+03	0.121E+10	0.259E-01	0.313E+08
-0.200E+02	0.320E+02	0.106E+03	0.115E+10	0.258E-01	0.297E+08
0.000E+00	0.320E+02	0.103E+03	0.115E+10	0.251E-01	0.289E+08
0.200E+02	0.314E+02	0.103E+03	0.111E+10	0.261E-01	0.289E+08
0.400E+02	0.313E+02	0.103E+03	0.111E+10	0.261E-01	0.289E+08
0.600E+02	0.311E+02	0.103E+03	0.109E+10	0.264E-01	0.289E+08
0.800E+02	0.310E+02	0.104E+03	0.109E+10	0.266E-01	0.290E+08
0.100E+03	0.308E+02	0.103E+03	0.107E+10	0.269E-01	0.289E+08
0.120E+03	0.307E+02	0.102E+03	0.107E+10	0.267E-01	0.285E+08
0.140E+03	0.306E+02	0.995E+02	0.106E+10	0.263E-01	0.279E+08
0.160E+03	0.303E+02	0.953E+02	0.104E+10	0.257E-01	0.267E+08
0.180E+03	0.298E+02	0.918E+02	0.100E+10	0.256E-01	0.257E+08
0.200E+03	0.292E+02	0.890E+02	0.962E+09	0.259E-01	0.249E+08
0.220E+03	0.277E+02	0.133E+03	0.865E+09	0.428E-01	0.370E+08
0.224E+03	0.258E+02	0.203E+03	0.751E+09	0.756E-01	0.567E+08
0.226E+03	0.240E+02	0.257E+03	0.647E+09	0.111E+00	0.716E+08
0.228E+03	0.217E+02	0.318E+03	0.527E+09	0.168E+00	0.884E+08
0.230E+03	0.195E+02	0.389E+03	0.427E+09	0.253E+00	0.108E+09
0.232E+03	0.170E+02	0.476E+03	0.320E+09	0.410E+00	0.131E+09
0.234E+03	0.139E+02	0.536E+03	0.213E+09	0.685E+00	0.146E+09
0.236E+03	0.102E+02	0.488E+03	0.111E+09	0.116E+01	0.129E+09
0.238E+03	0.654E+01	0.285E+03	0.416E+08	0.166E+01	0.689E+08
0.240E+03	0.450E+01	0.114E+03	0.160E+08	0.139E+01	0.222E+08
0.242E+03	0.358E+01	0.473E+02	0.756E+07	0.917E+00	0.693E+07
0.244E+03	0.299E+01	0.215E+02	0.318E+07	0.598E+00	0.190E+07

10/29/82
RUN558

2COP AGED 500HR@300C

(L/T RATIO = 4 635)

SAMPLE DIMENSIONS

LENGTH=0 00635C WIDTH=0.007710 THICK=0.001370 OSC AMP=0 10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0 275E+02	0. 860E+02	0. 174E+10	0. 282E-01	0. 490E+08
-0 100E+03	0. 263E+02	0. 104E+03	0. 159E+10	0. 373E-01	0. 593E+08
-0. 800E+02	0. 257E+02	0. 914E+02	0. 152E+10	0 343E-01	0 521E+08
-0 600E+02	0. 252E+02	0 757E+02	0. 146E+10	0 296E-01	0 431E+08
-0 400E+02	0. 249E+02	0. 615E+02	0. 142E+10	0 246E-01	0. 350E+08
-0 200E+02	0. 246E+02	0. 600E+02	0. 139E+10	0. 246E-01	0. 341E+08
0. 000E+00	0. 245E+02	0. 590E+02	0. 138E+10	0. 243E-01	0. 336E+08
0. 200E+02	0. 244E+02	0. 580E+02	0. 136E+10	0 243E-01	0. 330E+08
0. 400E+02	0. 243E+02	0. 563E+02	0. 136E+10	0. 236E-01	0. 320E+08
0. 600E+02	0. 243E+02	0. 588E+02	0. 135E+10	0. 248E-01	0 334E+08
0. 800E+02	0. 243E+02	0. 603E+02	0. 135E+10	0 254E-01	0. 343E+08
0. 100E+03	0. 241E+02	0. 603E+02	0. 133E+10	0. 258E-01	0. 343E+08
0. 120E+03	0. 240E+02	0. 610E+02	0. 132E+10	0. 262E-01	0. 347E+08
0 140E+03	0. 239E+02	0. 628E+02	0. 131E+10	0. 272E-01	0. 357E+08
0. 160E+03	0. 239E+02	0. 635E+02	0. 131E+10	0. 276E-01	0. 361E+08
0. 180E+03	0. 238E+02	0. 660E+02	0. 130E+10	0 288E-01	0 375E+08
0. 200E+03	0. 238E+02	0. 700E+02	0. 130E+10	0. 306E-01	0. 398E+08
0. 220E+03	0. 238E+02	0. 763E+02	0. 130E+10	0. 335E-01	0 434E+08
0. 240E+03	0 233E+02	0. 138E+03	0 124E+10	0 629E-01	0. 782E+08
0 248E+03	0. 215E+02	0. 257E+03	0. 106E+10	0 138E+00	0 146E+09
0 252E+03	0. 193E+02	0. 340E+03	0 852E+09	0 226E+00	0 192E+09
0 254E+03	0 179E+02	0 372E+03	0 731E+09	0 287E+00	0 210E+09
0. 256E+03	0 164E+02	0. 390E+03	0 608E+09	0 361E+00	0. 219E+09
0 258E+03	0 146E+02	0 388E+03	0 483E+09	0. 448E+00	0 216E+09
0 260E+03	0. 129E+02	0 363E+03	0 370E+09	0. 543E+00	0 201E+09
0 262E+03	0 111E+02	0. 316E+03	0 273E+09	0 632E+00	0. 172E+09
0 264E+03	0. 950E+01	0. 257E+03	0. 195E+09	0. 706E+00	0 138E+09
0 266E+03	0. 816E+01	0 199E+03	0 140E+09	0 741E+00	0 104E+09
0 268E+03	0. 638E+01	0. 148E+03	0 802E+08	0 902E+00	0 723E+08
0. 270E+03	0 597E+01	0 107E+03	0 686E+08	0 745E+00	0 511E+08
0. 272E+03	0. 519E+01	0. 765E+02	0 482E+08	0 705E+00	0 340E+08
0 274E+03	0. 460E+01	0 533E+02	0 349E+08	0 624E+00	0 218E+08
0 276E+03	0. 409E+01	0. 365E+02	0. 245E+08	0. 542E+00	0. 133E+08
0. 278E+03	0 367E+01	0 248E+02	0 171E+08	0 454E+00	0 778E+07
0 280E+03	0 336E+01	0 158E+02	0 120E+08	0 346E+00	0. 415E+07
0 282E+03	0. 306E+01	0. 975E+01	0 755E+07	0 258E+00	0 195E+07
0. 284E+03	0. 295E+01	0. 500E+01	0 597E+07	0. 142E+00	0 851E+06
0 286E+03	0 278E+01	0. 175E+01	0 365E+07	0 564E-01	0. 206E+06

10/29/82
RUN560

TORLON 4000T AGED 500HR@300C

(L/T RATIO = 5.248)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010470 THICK=0.001210 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.294E+02	0.132E+03	0.213E+10	0.379E-01	0.805E+08
-0.110E+03	0.210E+01	0.152E+03	-0.425E+07	0.855E+01	-0.363E+08
-0.900E+02	0.286E+02	0.164E+03	0.202E+10	0.496E-01	0.100E+09
-0.700E+02	0.281E+02	0.136E+03	0.194E+10	0.427E-01	0.829E+08
-0.500E+02	0.278E+02	0.118E+03	0.190E+10	0.377E-01	0.716E+08
-0.300E+02	0.275E+02	0.105E+03	0.186E+10	0.343E-01	0.637E+08
-0.100E+02	0.273E+02	0.550E+01	0.183E+10	0.183E-02	0.335E+07
0.100E+02	0.270E+02	0.920E+02	0.179E+10	0.313E-01	0.561E+08
0.300E+02	0.269E+02	0.920E+02	0.178E+10	0.315E-01	0.561E+08
0.500E+02	0.267E+02	0.920E+02	0.175E+10	0.320E-01	0.561E+08
0.700E+02	0.263E+02	0.853E+02	0.170E+10	0.305E-01	0.519E+08
0.900E+02	0.261E+02	0.853E+02	0.167E+10	0.310E-01	0.519E+08
0.110E+03	0.258E+02	0.863E+02	0.163E+10	0.322E-01	0.525E+08
0.130E+03	0.255E+02	0.880E+02	0.160E+10	0.335E-01	0.536E+08
0.150E+03	0.252E+02	0.905E+02	0.156E+10	0.353E-01	0.551E+08
0.170E+03	0.249E+02	0.450E+01	0.153E+10	0.179E-02	0.274E+07
0.190E+03	0.246E+02	0.948E+02	0.149E+10	0.387E-01	0.576E+08
0.210E+03	0.243E+02	0.953E+02	0.145E+10	0.400E-01	0.579E+08
0.230E+03	0.239E+02	0.935E+02	0.140E+10	0.405E-01	0.568E+08
0.250E+03	0.236E+02	0.890E+02	0.136E+10	0.397E-01	0.541E+08
0.270E+03	0.233E+02	0.845E+02	0.133E+10	0.387E-01	0.513E+08
0.290E+03	0.230E+02	0.788E+02	0.130E+10	0.368E-01	0.478E+08
0.310E+03	0.226E+02	0.773E+02	0.125E+10	0.374E-01	0.469E+08
0.330E+03	0.220E+02	0.843E+02	0.119E+10	0.430E-01	0.511E+08
0.350E+03	0.214E+02	0.227E+03	0.112E+10	0.123E+00	0.138E+09
0.364E+03	0.194E+02	0.500E+03	0.921E+09	0.328E+00	0.302E+09
0.366E+03	0.184E+02	0.506E+03	0.819E+09	0.373E+00	0.305E+09
0.368E+03	0.171E+02	0.495E+03	0.712E+09	0.418E+00	0.298E+09
0.370E+03	0.160E+02	0.460E+03	0.621E+09	0.444E+00	0.276E+09
0.372E+03	0.150E+02	0.413E+03	0.543E+09	0.454E+00	0.247E+09
0.376E+03	0.136E+02	0.312E+03	0.443E+09	0.413E+00	0.185E+09
0.380E+03	0.125E+02	0.224E+03	0.373E+09	0.354E+00	0.132E+09
0.386E+03	0.117E+02	0.143E+03	0.325E+09	0.259E+00	0.841E+08
0.392E+03	0.110E+02	0.990E+02	0.287E+09	0.201E+00	0.578E+08
0.400E+03	0.104E+02	0.698E+02	0.255E+09	0.159E+00	0.405E+08
0.408E+03	0.991E+01	0.555E+02	0.228E+09	0.140E+00	0.320E+08
0.422E+03	0.912E+01	0.435E+02	0.193E+09	0.128E+00	0.248E+08
0.424E+03	0.844E+01	0.365E+02	0.161E+09	0.127E+00	0.205E+08
0.430E+03	0.791E+01	0.328E+02	0.140E+09	0.130E+00	0.182E+08

9/7/82
RUN542

TORLON 4000T AGED 100HR@300C

(L/T RATIO = 5.248)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010120 THICK=0.001210 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.346E+02	0.190E+03	0.306E+10	0.393E-01	0.120E+09
-0.100E+03	0.341E+02	0.193E+03	0.297E+10	0.411E-01	0.122E+09
-0.800E+02	0.337E+02	0.196E+03	0.290E+10	0.428E-01	0.124E+09
-0.600E+02	0.334E+02	0.200E+03	0.284E+10	0.444E-01	0.126E+09
-0.400E+02	0.331E+02	0.203E+03	0.280E+10	0.459E-01	0.128E+09
-0.200E+02	0.328E+02	0.206E+03	0.275E+10	0.474E-01	0.130E+09
0.000E+00	0.328E+02	0.210E+03	0.273E+10	0.485E-01	0.133E+09
0.200E+02	0.326E+02	0.213E+03	0.272E+10	0.496E-01	0.135E+09
0.400E+02	0.324E+02	0.216E+03	0.268E+10	0.511E-01	0.137E+09
0.600E+02	0.320E+02	0.220E+03	0.262E+10	0.531E-01	0.139E+09
0.800E+02	0.317E+02	0.220E+03	0.257E+10	0.542E-01	0.139E+09
0.100E+03	0.314E+02	0.220E+03	0.252E+10	0.552E-01	0.139E+09
0.120E+03	0.310E+02	0.218E+03	0.245E+10	0.561E-01	0.138E+09
0.140E+03	0.307E+02	0.211E+03	0.241E+10	0.554E-01	0.133E+09
0.160E+03	0.303E+02	0.207E+03	0.234E+10	0.558E-01	0.131E+09
0.180E+03	0.298E+02	0.204E+03	0.226E+10	0.569E-01	0.129E+09
0.200E+03	0.293E+02	0.195E+03	0.218E+10	0.564E-01	0.123E+09
0.220E+03	0.288E+02	0.182E+03	0.211E+10	0.544E-01	0.115E+09
0.240E+03	0.284E+02	0.168E+03	0.205E+10	0.516E-01	0.106E+09
0.260E+03	0.280E+02	0.154E+03	0.199E+10	0.486E-01	0.968E+08
0.280E+03	0.276E+02	0.140E+03	0.193E+10	0.455E-01	0.880E+08
0.300E+03	0.271E+02	0.128E+03	0.186E+10	0.433E-01	0.805E+08
0.320E+03	0.265E+02	0.133E+03	0.178E+10	0.469E-01	0.835E+08
0.332E+03	0.250E+02	0.199E+03	0.159E+10	0.789E-01	0.125E+09
0.338E+03	0.233E+02	0.306E+03	0.137E+10	0.140E+00	0.192E+09
0.344E+03	0.213E+02	0.393E+03	0.115E+10	0.215E+00	0.246E+09
0.348E+03	0.191E+02	0.439E+03	0.917E+09	0.299E+00	0.274E+09
0.352E+03	0.171E+02	0.442E+03	0.733E+09	0.375E+00	0.275E+09
0.354E+03	0.159E+02	0.431E+03	0.632E+09	0.423E+00	0.267E+09
0.356E+03	0.149E+02	0.406E+03	0.555E+09	0.453E+00	0.251E+09
0.358E+03	0.137E+02	0.373E+03	0.467E+09	0.491E+00	0.229E+09
0.360E+03	0.127E+02	0.334E+03	0.400E+09	0.510E+00	0.204E+09
0.362E+03	0.118E+02	0.292E+03	0.342E+09	0.518E+00	0.177E+09
0.364E+03	0.111E+02	0.248E+03	0.297E+09	0.504E+00	0.150E+09
0.366E+03	0.104E+02	0.210E+03	0.262E+09	0.481E+00	0.126E+09
0.368E+03	0.968E+01	0.176E+03	0.224E+09	0.467E+00	0.105E+09
0.372E+03	0.888E+01	0.125E+03	0.186E+09	0.394E+00	0.734E+08
0.376E+03	0.829E+01	0.925E+02	0.160E+09	0.334E+00	0.536E+08
0.380E+03	0.788E+01	0.713E+02	0.143E+09	0.285E+00	0.408E+08
0.386E+03	0.744E+01	0.523E+02	0.126E+09	0.234E+00	0.295E+08
0.392E+03	0.706E+01	0.425E+02	0.112E+09	0.211E+00	0.237E+08
0.404E+03	0.668E+01	0.323E+02	0.985E+08	0.179E+00	0.177E+08
0.424E+03	0.647E+01	0.255E+02	0.918E+08	0.151E+00	0.138E+08

10/29/82
RUN392

TORLON 4000 T

(L/T RATIO = 5 292)

SAMPLE DIMENSIONS
LENGTH=0 00535C WIDTH=0.010160 THICK=0.001200 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0. 353E+02	0. 278E+02	0. 325E+10	0. 110E-01	0 359E+08
-0. 100E+03	0. 348E+02	0. 393E+02	0. 315E+10	0. 161E-01	0. 507E+08
-0 800E+02	0. 341E+02	0. 550E+02	0. 303E+10	0. 235E-01	0. 710E+08
-0. 600E+02	0 333E+02	0. 673E+02	0 289E+10	0. 301E-01	0. 868E+08
-0. 400E+02	0. 327E+02	0 668E+02	0 279E+10	0. 309E-01	0. 862E+08
-0. 200E+02	0. 322E+02	0. 678E+02	0 270E+10	0 324E-01	0. 875E+08
0. 000E+00	0. 317E+02	0. 715E+02	0. 262E+10	0. 352E-01	0. 923E+08
0. 200E+02	0. 312E+02	0. 800E+02	0. 253E+10	0. 408E-01	0. 103E+09
0. 400E+02	0. 308E+02	0. 905E+02	0. 247E+10	0. 473E-01	0. 117E+09
0. 600E+02	0. 301E+02	0. 103E+03	0. 235E+10	0. 562E-01	0. 132E+09
0. 800E+02	0. 294E+02	0. 109E+03	0. 224E+10	0. 628E-01	0. 141E+09
0. 100E+03	0. 287E+02	0. 995E+02	0. 214E+10	0. 600E-01	0. 128E+09
0. 120E+03	0. 282E+02	0. 860E+02	0. 206E+10	0. 537E-01	0. 111E+09
0. 140E+03	0. 278E+02	0. 740E+02	0. 200E+10	0. 477E-01	0. 953E+08
0. 160E+03	0. 274E+02	0. 643E+02	0. 194E+10	0. 426E-01	0. 827E+08
0. 180E+03	0. 270E+02	0. 558E+02	0. 190E+10	0. 378E-01	0. 718E+08
0. 200E+03	0. 269E+02	0. 475E+02	0. 187E+10	0. 326E-01	0. 612E+08
0. 220E+03	0. 266E+02	0. 420E+02	0. 183E+10	0. 295E-01	0. 541E+08
0 240E+03	0. 261E+02	0 373E+02	0. 177E+10	0 270E-01	0. 479E+08
0 260E+03	0 257E+02	0 370E+02	0 171E+10	0. 279E-01	0. 476E+08
0. 278E+03	0. 242E+02	0. 708E+02	0 152E+10	0. 599E-01	0 909E+08
0. 282E+03	0. 224E+02	0. 108E+03	0. 130E+10	0 107E+00	0. 139E+09
0. 284E+03	0. 210E+02	0. 136E+03	0. 113E+10	0 153E+00	0. 174E+09
0. 286E+03	0. 191E+02	0. 161E+03	0 937E+09	0 220E+00	0 206E+09
0. 288E+03	0. 169E+02	0 182E+03	0. 734E+09	0. 316E+00	0. 232E+09
0. 290E+03	0. 147E+02	0. 191E+03	0. 547E+09	0. 441E+00	0. 241E+09
0. 292E+03	0. 122E+02	0. 182E+03	0. 372E+09	0. 609E+00	0 227E+09
0. 294E+03	0. 964E+01	0. 153E+03	0 227E+09	0. 814E+00	0. 185E+09
0. 296E+03	0. 754E+01	0. 110E+03	0. 133E+09	0. 963E+00	0 128E+09
0. 298E+03	0. 590E+01	0 690E+02	0. 751E+08	0 983E+00	0 738E+08
0. 300E+03	0. 479E+01	0. 405E+02	0 440E+08	0. 877E+00	0. 385E+08
0. 302E+03	0. 397E+01	0. 225E+02	0. 253E+08	0. 706E+00	0 179E+08
0. 304E+03	0. 336E+01	0 110E+02	0. 136E+08	0 483E+00	0. 654E+07
0 306E+03	0. 267E+01	0. 250E+01	0. 270E+07	0 173E+00	0. 467E+06

9/7/82
RUN536

TORLON 4000T 100HR@250C

(L/T RATIO = 4.961)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.009960 THICK=0.001280 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.354E+02	0.139E+03	0.274E+10	0.276E-01	0.756E+08
-0.100E+03	0.349E+02	0.152E+03	0.266E+10	0.309E-01	0.824E+08
-0.800E+02	0.353E+02	0.157E+03	0.272E+10	0.314E-01	0.854E+08
-0.600E+02	0.350E+02	0.146E+03	0.268E+10	0.296E-01	0.794E+08
-0.400E+02	0.348E+02	0.135E+03	0.264E+10	0.277E-01	0.734E+08
-0.200E+02	0.344E+02	0.124E+03	0.259E+10	0.261E-01	0.674E+08
0.000E+00	0.341E+02	0.130E+03	0.255E+10	0.276E-01	0.704E+08
0.200E+02	0.339E+02	0.135E+03	0.251E+10	0.292E-01	0.734E+08
0.400E+02	0.338E+02	0.141E+03	0.249E+10	0.306E-01	0.764E+08
0.600E+02	0.336E+02	0.146E+03	0.247E+10	0.321E-01	0.794E+08
0.800E+02	0.336E+02	0.153E+03	0.247E+10	0.334E-01	0.828E+08
0.100E+03	0.334E+02	0.158E+03	0.244E+10	0.351E-01	0.855E+08
0.120E+03	0.331E+02	0.163E+03	0.240E+10	0.367E-01	0.882E+08
0.140E+03	0.328E+02	0.170E+03	0.235E+10	0.393E-01	0.922E+08
0.160E+03	0.324E+02	0.178E+03	0.229E+10	0.420E-01	0.963E+08
0.180E+03	0.320E+02	0.185E+03	0.224E+10	0.448E-01	0.100E+09
0.200E+03	0.316E+02	0.193E+03	0.219E+10	0.477E-01	0.104E+09
0.220E+03	0.313E+02	0.205E+03	0.214E+10	0.521E-01	0.111E+09
0.240E+03	0.308E+02	0.218E+03	0.207E+10	0.570E-01	0.118E+09
0.260E+03	0.303E+02	0.228E+03	0.200E+10	0.617E-01	0.123E+09
0.280E+03	0.295E+02	0.240E+03	0.190E+10	0.684E-01	0.130E+09
0.300E+03	0.289E+02	0.260E+03	0.182E+10	0.773E-01	0.141E+09
0.320E+03	0.275E+02	0.285E+03	0.165E+10	0.935E-01	0.154E+09
0.330E+03	0.258E+02	0.300E+03	0.145E+10	0.112E+00	0.162E+09
0.336E+03	0.238E+02	0.370E+03	0.123E+10	0.163E+00	0.200E+09
0.340E+03	0.221E+02	0.435E+03	0.106E+10	0.220E+00	0.234E+09
0.344E+03	0.199E+02	0.500E+03	0.856E+09	0.314E+00	0.269E+09
0.346E+03	0.185E+02	0.528E+03	0.740E+09	0.382E+00	0.283E+09
0.348E+03	0.171E+02	0.535E+03	0.632E+09	0.452E+00	0.286E+09
0.350E+03	0.158E+02	0.530E+03	0.532E+09	0.530E+00	0.282E+09
0.352E+03	0.143E+02	0.503E+03	0.433E+09	0.614E+00	0.266E+09
0.354E+03	0.126E+02	0.460E+03	0.337E+09	0.716E+00	0.241E+09
0.356E+03	0.110E+02	0.398E+03	0.253E+09	0.815E+00	0.206E+09
0.358E+03	0.963E+01	0.328E+03	0.190E+09	0.877E+00	0.167E+09
0.360E+03	0.850E+01	0.265E+03	0.146E+09	0.910E+00	0.132E+09
0.362E+03	0.763E+01	0.205E+03	0.114E+09	0.874E+00	0.100E+09
0.364E+03	0.683E+01	0.158E+03	0.905E+08	0.826E+00	0.748E+08
0.366E+03	0.625E+01	0.125E+03	0.725E+08	0.794E+00	0.575E+08
0.368E+03	0.575E+01	0.950E+02	0.593E+08	0.713E+00	0.422E+08
0.370E+03	0.538E+01	0.750E+02	0.501E+08	0.644E+00	0.323E+08
0.372E+03	0.513E+01	0.600E+02	0.443E+08	0.566E+00	0.251E+08
0.374E+03	0.488E+01	0.475E+02	0.388E+08	0.496E+00	0.192E+08
0.378E+03	0.463E+01	0.325E+02	0.336E+08	0.377E+00	0.127E+08
0.380E+03	0.438E+01	0.250E+02	0.286E+08	0.324E+00	0.928E+07
0.386E+03	0.413E+01	0.150E+02	0.240E+08	0.219E+00	0.524E+07
0.392E+03	0.388E+01	0.750E+01	0.196E+08	0.124E+00	0.242E+07
0.396E+03	0.375E+01	0.500E+01	0.175E+08	0.882E-01	0.154E+07
0.408E+03	0.363E+01	0.250E+01	0.154E+08	0.472E-01	0.728E+06

10/29/82
RUN545

UPJOHN 2080 AGED 100HR@300C

(L/T RATIO = 5.474)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010720 THICK=0.001160 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.381E+02	0.760E+02	0.398E+10	0.130E-01	0.516E+08
-0.100E+03	0.375E+02	0.100E+03	0.385E+10	0.176E-01	0.678E+08
-0.800E+02	0.369E+02	0.124E+03	0.373E+10	0.225E-01	0.841E+08
-0.600E+02	0.364E+02	0.148E+03	0.363E+10	0.277E-01	0.100E+09
-0.400E+02	0.356E+02	0.152E+03	0.347E+10	0.297E-01	0.103E+09
-0.200E+02	0.352E+02	0.119E+03	0.339E+10	0.238E-01	0.807E+08
0.000E+00	0.348E+02	0.112E+03	0.330E+10	0.230E-01	0.759E+08
0.200E+02	0.342E+02	0.122E+03	0.320E+10	0.258E-01	0.827E+08
0.400E+02	0.336E+02	0.132E+03	0.309E+10	0.290E-01	0.894E+08
0.600E+02	0.330E+02	0.137E+03	0.298E+10	0.311E-01	0.928E+08
0.800E+02	0.321E+02	0.140E+03	0.282E+10	0.336E-01	0.948E+08
0.100E+03	0.315E+02	0.140E+03	0.271E+10	0.349E-01	0.948E+08
0.120E+03	0.310E+02	0.140E+03	0.263E+10	0.360E-01	0.948E+08
0.140E+03	0.305E+02	0.137E+03	0.255E+10	0.364E-01	0.927E+08
0.160E+03	0.300E+02	0.131E+03	0.245E+10	0.362E-01	0.886E+08
0.180E+03	0.296E+02	0.125E+03	0.239E+10	0.354E-01	0.846E+08
0.200E+03	0.292E+02	0.114E+03	0.232E+10	0.331E-01	0.768E+08
0.220E+03	0.289E+02	0.103E+03	0.228E+10	0.307E-01	0.698E+08
0.240E+03	0.285E+02	0.980E+02	0.221E+10	0.299E-01	0.663E+08
0.260E+03	0.281E+02	0.983E+02	0.215E+10	0.309E-01	0.664E+08
0.280E+03	0.276E+02	0.120E+03	0.207E+10	0.389E-01	0.808E+08
0.296E+03	0.258E+02	0.280E+03	0.181E+10	0.104E+00	0.189E+09
0.300E+03	0.244E+02	0.384E+03	0.162E+10	0.160E+00	0.259E+09
0.304E+03	0.220E+02	0.502E+03	0.131E+10	0.258E+00	0.338E+09
0.306E+03	0.206E+02	0.540E+03	0.115E+10	0.316E+00	0.362E+09
0.308E+03	0.188E+02	0.538E+03	0.958E+09	0.376E+00	0.360E+09
0.310E+03	0.171E+02	0.505E+03	0.791E+09	0.426E+00	0.337E+09
0.312E+03	0.151E+02	0.432E+03	0.611E+09	0.469E+00	0.286E+09
0.314E+03	0.135E+02	0.348E+03	0.484E+09	0.473E+00	0.229E+09
0.316E+03	0.121E+02	0.277E+03	0.386E+09	0.468E+00	0.181E+09
0.318E+03	0.110E+02	0.221E+03	0.316E+09	0.452E+00	0.143E+09
0.320E+03	0.984E+01	0.181E+03	0.249E+09	0.463E+00	0.115E+09
0.322E+03	0.894E+01	0.151E+03	0.203E+09	0.467E+00	0.947E+08
0.324E+03	0.839E+01	0.126E+03	0.176E+09	0.443E+00	0.782E+08
0.326E+03	0.788E+01	0.108E+03	0.154E+09	0.431E+00	0.662E+08
0.328E+03	0.717E+01	0.918E+02	0.125E+09	0.440E+00	0.551E+08
0.330E+03	0.669E+01	0.753E+02	0.106E+09	0.417E+00	0.442E+08
0.332E+03	0.619E+01	0.640E+02	0.884E+08	0.414E+00	0.366E+08
0.334E+03	0.578E+01	0.553E+02	0.748E+08	0.411E+00	0.307E+08
0.336E+03	0.538E+01	0.458E+02	0.625E+08	0.393E+00	0.246E+08
0.338E+03	0.496E+01	0.388E+02	0.508E+08	0.390E+00	0.198E+08
0.342E+03	0.447E+01	0.273E+02	0.382E+08	0.337E+00	0.129E+08
0.344E+03	0.424E+01	0.228E+02	0.325E+08	0.314E+00	0.102E+08
0.346E+03	0.404E+01	0.188E+02	0.279E+08	0.285E+00	0.797E+07
0.348E+03	0.389E+01	0.155E+02	0.247E+08	0.254E+00	0.628E+07
0.350E+03	0.367E+01	0.125E+02	0.203E+08	0.230E+00	0.465E+07
0.352E+03	0.356E+01	0.103E+02	0.180E+08	0.200E+00	0.361E+07
0.354E+03	0.346E+01	0.775E+01	0.161E+08	0.160E+00	0.258E+07
0.356E+03	0.336E+01	0.600E+01	0.142E+08	0.132E+00	0.187E+07

0.359E-03	0.327E+01	0.475E+01	0.125E+08	0.110E+00	0.138E+07
0.360E-03	0.316E+01	0.325E+01	0.107E+08	0.805E-01	0.860E+06
0.362E-03	0.307E+01	0.225E+01	0 898E+07	0.594E-01	0.533E+06

10/29/82
RUN563

UPJOHN 2080 AGED 500HR@300C

(L/T RATIO = 5.248)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009170 THICK=0.001210 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.329E+02	0.111E+03	0.305E+10	0.253E-01	0.771E+08
-0.100E+03	0.324E+02	0.137E+03	0.296E+10	0.323E-01	0.954E+08
-0.800E+02	0.321E+02	0.155E+03	0.291E+10	0.372E-01	0.108E+09
-0.600E+02	0.305E+02	0.187E+03	0.261E+10	0.498E-01	0.130E+09
-0.400E+02	0.299E+02	0.205E+03	0.251E+10	0.568E-01	0.143E+09
-0.200E+02	0.293E+02	0.209E+03	0.241E+10	0.603E-01	0.146E+09
0.000E+00	0.287E+02	0.203E+03	0.232E+10	0.610E-01	0.141E+09
0.200E+02	0.281E+02	0.178E+03	0.222E+10	0.559E-01	0.124E+09
0.400E+02	0.277E+02	0.152E+03	0.216E+10	0.489E-01	0.105E+09
0.600E+02	0.273E+02	0.136E+03	0.210E+10	0.450E-01	0.943E+08
0.800E+02	0.269E+02	0.134E+03	0.203E+10	0.457E-01	0.929E+08
0.100E+03	0.265E+02	0.129E+03	0.197E+10	0.457E-01	0.899E+08
0.120E+03	0.261E+02	0.125E+03	0.191E+10	0.455E-01	0.867E+08
0.140E+03	0.258E+02	0.119E+03	0.187E+10	0.444E-01	0.829E+08
0.160E+03	0.254E+02	0.112E+03	0.181E+10	0.431E-01	0.778E+08
0.180E+03	0.251E+02	0.105E+03	0.177E+10	0.412E-01	0.730E+08
0.200E+03	0.249E+02	0.985E+02	0.173E+10	0.396E-01	0.684E+08
0.220E+03	0.245E+02	0.933E+02	0.169E+10	0.384E-01	0.648E+08
0.240E+03	0.243E+02	0.880E+02	0.165E+10	0.371E-01	0.611E+08
0.260E+03	0.238E+02	0.845E+02	0.159E+10	0.369E-01	0.587E+08
0.290E+03	0.233E+02	0.978E+02	0.152E+10	0.446E-01	0.678E+08
0.292E+03	0.220E+02	0.149E+03	0.136E+10	0.761E-01	0.103E+09
0.298E+03	0.205E+02	0.233E+03	0.117E+10	0.138E+00	0.161E+09
0.302E+03	0.187E+02	0.298E+03	0.969E+09	0.212E+00	0.205E+09
0.304E+03	0.175E+02	0.320E+03	0.850E+09	0.259E+00	0.220E+09
0.306E+03	0.164E+02	0.326E+03	0.740E+09	0.302E+00	0.223E+09
0.308E+03	0.152E+02	0.314E+03	0.639E+09	0.336E+00	0.214E+09
0.310E+03	0.142E+02	0.289E+03	0.550E+09	0.357E+00	0.197E+09
0.312E+03	0.132E+02	0.257E+03	0.476E+09	0.366E+00	0.174E+09
0.314E+03	0.123E+02	0.224E+03	0.412E+09	0.367E+00	0.151E+09
0.316E+03	0.115E+02	0.196E+03	0.359E+09	0.364E+00	0.131E+09
0.318E+03	0.108E+02	0.169E+03	0.315E+09	0.356E+00	0.112E+09
0.320E+03	0.101E+02	0.146E+03	0.273E+09	0.353E+00	0.963E+08
0.322E+03	0.948E+01	0.127E+03	0.237E+09	0.350E+00	0.829E+08
0.324E+03	0.888E+01	0.111E+03	0.206E+09	0.348E+00	0.715E+08
0.328E+03	0.799E+01	0.843E+02	0.163E+09	0.327E+00	0.534E+08
0.330E+03	0.757E+01	0.738E+02	0.145E+09	0.319E+00	0.462E+08
0.334E+03	0.697E+01	0.578E+02	0.120E+09	0.294E+00	0.354E+08
0.338E+03	0.644E+01	0.460E+02	0.999E+08	0.275E+00	0.275E+08
0.342E+03	0.596E+01	0.370E+02	0.833E+08	0.258E+00	0.215E+08
0.346E+03	0.556E+01	0.303E+02	0.702E+08	0.242E+00	0.170E+08
0.352E+03	0.523E+01	0.230E+02	0.607E+08	0.207E+00	0.126E+08
0.356E+03	0.495E+01	0.195E+02	0.520E+08	0.197E+00	0.103E+08
0.360E+03	0.475E+01	0.163E+02	0.465E+08	0.179E+00	0.831E+07
0.364E+03	0.446E+01	0.140E+02	0.390E+08	0.174E+00	0.620E+07
0.366E+03	0.418E+01	0.125E+02	0.320E+08	0.178E+00	0.569E+07
0.370E+03	0.397E+01	0.105E+02	0.274E+08	0.165E+00	0.451E+07
0.374E+03	0.383E+01	0.850E+01	0.241E+08	0.144E+00	0.347E+07
0.378E+03	0.366E+01	0.673E+01	0.206E+08	0.125E+00	0.257E+07

0.382E+03	0.354E+01	0.500E+01	0.121E+08	0.991E-01	0.179E+07
0.386E-03	0.336E+01	0.350E+01	0.146E+08	0.768E-01	0.112E+07
0.390E+03	0.326E+01	0.250E+01	0.128E+08	0.582E-01	0.745E+06
0.394E+03	0.316E+01	0.125E+01	0.110E+08	0.310E-01	0.340E+06
0.395E+03	0.272E+01	0.250E+00	0.368E+07	0.835E-02	0.307E+05

UPJOHN 2080 PRESSED 8-12-81

(L/T RATIO = 7.651)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.011430 THICK=0.000830 DEG AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.229E+02	0.695E+02	0.363E+10	0.330E-01	0.120E+09
-0.100E+03	0.226E+02	0.485E+02	0.357E+10	0.234E-01	0.836E+08
-0.800E+02	0.224E+02	0.463E+02	0.349E+10	0.228E-01	0.797E+08
-0.600E+02	0.219E+02	0.420E+02	0.333E+10	0.217E-01	0.723E+08
-0.400E+02	0.217E+02	0.418E+02	0.326E+10	0.221E-01	0.719E+08
-0.200E+02	0.214E+02	0.413E+02	0.316E+10	0.224E-01	0.710E+08
0.000E+00	0.211E+02	0.415E+02	0.308E+10	0.232E-01	0.714E+08
0.200E+02	0.208E+02	0.413E+02	0.299E+10	0.238E-01	0.709E+08
0.400E+02	0.205E+02	0.423E+02	0.293E+10	0.248E-01	0.726E+08
0.600E+02	0.204E+02	0.438E+02	0.287E+10	0.262E-01	0.752E+08
0.800E+02	0.202E+02	0.445E+02	0.283E+10	0.270E-01	0.764E+08
0.100E+03	0.200E+02	0.453E+02	0.276E+10	0.281E-01	0.777E+08
0.120E+03	0.198E+02	0.463E+02	0.271E+10	0.293E-01	0.794E+08
0.140E+03	0.196E+02	0.478E+02	0.265E+10	0.309E-01	0.820E+08
0.160E+03	0.194E+02	0.500E+02	0.260E+10	0.330E-01	0.858E+08
0.180E+03	0.191E+02	0.528E+02	0.253E+10	0.358E-01	0.905E+08
0.200E+03	0.188E+02	0.558E+02	0.244E+10	0.391E-01	0.955E+08
0.220E+03	0.184E+02	0.585E+02	0.233E+10	0.430E-01	0.100E+09
0.240E+03	0.181E+02	0.590E+02	0.226E+10	0.447E-01	0.101E+09
0.260E+03	0.177E+02	0.575E+02	0.215E+10	0.457E-01	0.983E+08
0.280E+03	0.173E+02	0.555E+02	0.206E+10	0.461E-01	0.948E+08
0.300E+03	0.169E+02	0.558E+02	0.196E+10	0.486E-01	0.951E+08
0.318E+03	0.159E+02	0.670E+02	0.175E+10	0.653E-01	0.114E+09
0.326E+03	0.149E+02	0.858E+02	0.151E+10	0.963E-01	0.145E+09
0.330E+03	0.141E+02	0.101E+03	0.135E+10	0.126E+00	0.170E+09
0.334E+03	0.130E+02	0.118E+03	0.114E+10	0.175E+00	0.199E+09
0.338E+03	0.119E+02	0.137E+03	0.949E+09	0.240E+00	0.228E+09
0.340E+03	0.113E+02	0.145E+03	0.847E+09	0.284E+00	0.240E+09
0.342E+03	0.106E+02	0.151E+03	0.747E+09	0.334E+00	0.249E+09
0.344E+03	0.971E+01	0.154E+03	0.620E+09	0.406E+00	0.252E+09
0.346E+03	0.891E+01	0.153E+03	0.516E+09	0.476E+00	0.245E+09
0.348E+03	0.802E+01	0.145E+03	0.410E+09	0.556E+00	0.228E+09
0.350E+03	0.709E+01	0.131E+03	0.310E+09	0.647E+00	0.201E+09
0.352E+03	0.630E+01	0.112E+03	0.236E+09	0.701E+00	0.166E+09
0.354E+03	0.551E+01	0.915E+02	0.171E+09	0.747E+00	0.127E+09
0.356E+03	0.481E+01	0.705E+02	0.120E+09	0.755E+00	0.904E+08
0.358E+03	0.421E+01	0.523E+02	0.818E+08	0.730E+00	0.597E+08
0.360E+03	0.380E+01	0.378E+02	0.585E+08	0.648E+00	0.379E+08
0.362E+03	0.339E+01	0.265E+02	0.376E+08	0.573E+00	0.216E+08
0.364E+03	0.314E+01	0.173E+02	0.262E+08	0.434E+00	0.114E+08
0.366E+03	0.289E+01	0.108E+02	0.156E+08	0.320E+00	0.498E+07
0.368E+03	0.269E+01	0.550E+01	0.773E+07	0.189E+00	0.146E+07

9/7/82
RUN538

UPJOHN 2080 AGED 100HR@250C

(L/T RATIO = 4. 635)

SAMPLE DIMENSIONS

LENGTH=0. 006350 WIDTH=0 010570 THICK=0. 001370 OSC AMP=0. 10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0. 120E+03	0. 413E+02	0. 800E+02	0. 298E+10	0. 116E-01	0. 334E+08
-0. 100E+03	0. 408E+02	0. 925E+02	0. 281E+10	0. 138E-01	0. 387E+08
-0. 800E+02	0. 398E+02	0. 105E+03	0. 268E+10	0. 164E-01	0. 440E+08
-0. 600E+02	0. 392E+02	0. 119E+03	0. 259E+10	0. 191E-01	0. 496E+08
-0. 400E+02	0. 387E+02	0. 132E+03	0. 252E+10	0. 219E-01	0. 551E+08
-0. 200E+02	0. 382E+02	0. 144E+03	0. 245E+10	0. 246E-01	0. 603E+08
0. 000E+00	0. 377E+02	0. 157E+03	0. 240E+10	0. 273E-01	0. 654E+08
0. 200E+02	0. 372E+02	0. 174E+03	0. 233E+10	0. 311E-01	0. 727E+08
0. 400E+02	0. 370E+02	0. 192E+03	0. 230E+10	0. 348E-01	0. 800E+08
0. 600E+02	0. 365E+02	0. 209E+03	0. 225E+10	0. 388E-01	0. 873E+08
0. 800E+02	0. 361E+02	0. 220E+03	0. 220E+10	0. 417E-01	0. 917E+08
0. 100E+03	0. 357E+02	0. 221E+03	0. 215E+10	0. 428E-01	0. 920E+08
0. 120E+03	0. 353E+02	0. 214E+03	0. 210E+10	0. 426E-01	0. 894E+08
0. 140E+03	0. 349E+02	0. 199E+03	0. 205E+10	0. 405E-01	0. 831E+08
0. 160E+03	0. 345E+02	0. 179E+03	0. 201E+10	0. 372E-01	0. 747E+08
0. 180E+03	0. 342E+02	0. 158E+03	0. 197E+10	0. 333E-01	0. 657E+08
0. 200E+03	0. 339E+02	0. 138E+03	0. 194E+10	0. 297E-01	0. 575E+08
0. 220E+03	0. 337E+02	0. 131E+03	0. 191E+10	0. 285E-01	0. 546E+08
0. 240E+03	0. 335E+02	0. 118E+03	0. 189E+10	0. 260E-01	0. 491E+08
0. 260E+03	0. 333E+02	0. 117E+03	0. 187E+10	0. 262E-01	0. 489E+08
0. 278E+03	0. 315E+02	0. 245E+03	0. 167E+10	0. 612E-01	0. 102E+09
0. 280E+03	0. 295E+02	0. 395E+03	0. 147E+10	0. 112E+00	0. 164E+09
0. 282E+03	0. 269E+02	0. 536E+03	0. 121E+10	0. 184E+00	0. 223E+09
0. 284E+03	0. 249E+02	0. 610E+03	0. 104E+10	0 244E+00	0. 253E+09
0. 286E+03	0. 220E+02	0. 653E+03	0. 810E+09	0. 334E+00	0. 270E+09
0. 288E+03	0. 193E+02	0. 647E+03	0. 617E+09	0. 433E+00	0. 267E+09
0. 290E+03	0. 167E+02	0. 621E+03	0. 461E+09	0. 552E+00	0. 255E+09
0. 292E+03	0. 142E+02	0. 561E+03	0. 331E+09	0. 689E+00	0. 228E+09
0 294E+03	0. 120E+02	0. 471E+03	0. 232E+09	0. 816E+00	0. 189E+09
0. 296E+03	0. 984E+01	0. 362E+03	0. 153E+09	0. 928E+00	0. 142E+09
0. 298E+03	0. 811E+01	0. 257E+03	0. 101E+09	0. 966E+00	0. 976E+08
0. 300E+03	0. 676E+01	0. 173E+03	0. 670E+08	0. 940E+00	0. 629E+08
0. 302E+03	0. 573E+01	0. 117E+03	0. 460E+08	0. 872E+00	0. 401E+08
0. 304E+03	0. 490E+01	0. 795E+02	0. 302E+08	0. 821E+00	0. 248E+08
0. 306E+03	0. 440E+01	0. 555E+02	0. 224E+08	0. 711E+00	0. 159E+08
0. 308E+03	0. 399E+01	0. 398E+02	0. 165E+08	0. 620E+00	0. 102E+08
0. 310E+03	0. 369E+01	0. 293E+02	0. 126E+08	0. 533E+00	0. 674E+07
0. 312E+03	0. 341E+01	0. 215E+02	0. 933E+07	0. 458E+00	0. 427E+07
0. 314E+03	0. 317E+01	0. 158E+02	0. 669E+07	0. 387E+00	0. 259E+07
0. 316E+03	0. 309E+01	0. 115E+02	0. 577E+07	0. 299E+00	0. 172E+07
0. 318E+03	0. 288E+01	0. 775E+01	0. 362E+07	0. 233E+00	0. 841E+06
0. 320E+03	0. 280E+01	0. 500E+01	0. 290E+07	0. 158E+00	0. 459E+06
0. 322E+03	0. 270E+01	0. 275E+01	0. 197E+07	0. 935E-01	0. 184E+06

10/29/82
RUN566

XU218G AGED 500HR@300C

(L/T RATIO = 5.381)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.008980 THICK=0.001180 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.283E+02	0.148E+03	0.248E+10	0.456E-01	0.113E+09
-0.100E+03	0.276E+02	0.150E+03	0.235E+10	0.488E-01	0.115E+09
-0.800E+02	0.272E+02	0.138E+03	0.228E+10	0.464E-01	0.106E+09
-0.600E+02	0.267E+02	0.116E+03	0.221E+10	0.402E-01	0.888E+08
-0.400E+02	0.263E+02	0.963E+02	0.214E+10	0.344E-01	0.737E+08
-0.200E+02	0.260E+02	0.855E+02	0.208E+10	0.314E-01	0.655E+08
0.000E+00	0.257E+02	0.785E+02	0.204E+10	0.295E-01	0.601E+08
0.200E+02	0.253E+02	0.750E+02	0.197E+10	0.291E-01	0.574E+08
0.400E+02	0.250E+02	0.753E+02	0.193E+10	0.298E-01	0.576E+08
0.600E+02	0.247E+02	0.790E+02	0.188E+10	0.321E-01	0.604E+08
0.800E+02	0.244E+02	0.840E+02	0.184E+10	0.350E-01	0.642E+08
0.100E+03	0.241E+02	0.890E+02	0.179E+10	0.380E-01	0.680E+08
0.120E+03	0.237E+02	0.893E+02	0.173E+10	0.395E-01	0.682E+08
0.140E+03	0.233E+02	0.855E+02	0.167E+10	0.392E-01	0.653E+08
0.160E+03	0.229E+02	0.795E+02	0.161E+10	0.376E-01	0.607E+08
0.180E+03	0.226E+02	0.723E+02	0.157E+10	0.351E-01	0.551E+08
0.200E+03	0.223E+02	0.643E+02	0.153E+10	0.321E-01	0.490E+08
0.220E+03	0.221E+02	0.573E+02	0.150E+10	0.291E-01	0.437E+08
0.240E+03	0.219E+02	0.510E+02	0.147E+10	0.264E-01	0.389E+08
0.260E+03	0.216E+02	0.465E+02	0.143E+10	0.247E-01	0.355E+08
0.280E+03	0.212E+02	0.443E+02	0.138E+10	0.244E-01	0.337E+08
0.300E+03	0.208E+02	0.493E+02	0.133E+10	0.282E-01	0.375E+08
0.320E+03	0.204E+02	0.753E+02	0.128E+10	0.449E-01	0.573E+08
0.330E+03	0.193E+02	0.218E+03	0.115E+10	0.144E+00	0.165E+09
0.334E+03	0.175E+02	0.281E+03	0.930E+09	0.229E+00	0.213E+09
0.336E+03	0.165E+02	0.302E+03	0.832E+09	0.274E+00	0.228E+09
0.338E+03	0.154E+02	0.323E+03	0.721E+09	0.337E+00	0.243E+09
0.340E+03	0.141E+02	0.326E+03	0.604E+09	0.405E+00	0.244E+09
0.342E+03	0.127E+02	0.303E+03	0.485E+09	0.464E+00	0.225E+09
0.344E+03	0.114E+02	0.252E+03	0.389E+09	0.477E+00	0.185E+09
0.346E+03	0.104E+02	0.189E+03	0.320E+09	0.431E+00	0.138E+09
0.348E+03	0.977E+01	0.141E+03	0.279E+09	0.366E+00	0.102E+09
0.350E+03	0.929E+01	0.108E+03	0.250E+09	0.310E+00	0.775E+08
0.354E+03	0.881E+01	0.683E+02	0.223E+09	0.218E+00	0.486E+08
0.360E+03	0.836E+01	0.438E+02	0.199E+09	0.155E+00	0.308E+08
0.366E+03	0.797E+01	0.358E+02	0.179E+09	0.139E+00	0.250E+08
0.374E+03	0.747E+01	0.315E+02	0.155E+09	0.140E+00	0.217E+08
0.382E+03	0.706E+01	0.295E+02	0.136E+09	0.147E+00	0.200E+08
0.392E+03	0.666E+01	0.275E+02	0.119E+09	0.154E+00	0.183E+08
0.400E+03	0.636E+01	0.255E+02	0.107E+09	0.156E+00	0.167E+08
0.410E+03	0.607E+01	0.230E+02	0.959E+08	0.155E+00	0.148E+08
0.422E+03	0.580E+01	0.193E+02	0.857E+08	0.142E+00	0.122E+08
0.430E+03	0.532E+01	0.163E+02	0.709E+08	0.139E+00	0.989E+07

10/29/82
RUN567

XU216G AGED 100HR@250C

(L/T RATIO = 6.106)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.009040 THICK=0.001040 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.257E+02	0.608E+02	0.296E+10	0.228E-01	0.675E+08
-0.100E+03	0.252E+02	0.540E+02	0.284E+10	0.211E-01	0.599E+08
-0.800E+02	0.248E+02	0.523E+02	0.276E+10	0.210E-01	0.580E+08
-0.600E+02	0.244E+02	0.548E+02	0.266E+10	0.228E-01	0.607E+08
-0.400E+02	0.241E+02	0.570E+02	0.259E+10	0.244E-01	0.632E+08
-0.200E+02	0.237E+02	0.575E+02	0.250E+10	0.255E-01	0.637E+08
0.000E+00	0.233E+02	0.588E+02	0.242E+10	0.269E-01	0.651E+08
0.200E+02	0.231E+02	0.620E+02	0.238E+10	0.289E-01	0.687E+08
0.400E+02	0.226E+02	0.685E+02	0.232E+10	0.327E-01	0.759E+08
0.600E+02	0.223E+02	0.735E+02	0.222E+10	0.367E-01	0.814E+08
0.800E+02	0.219E+02	0.785E+02	0.214E+10	0.406E-01	0.869E+08
0.100E+03	0.213E+02	0.795E+02	0.202E+10	0.435E-01	0.879E+08
0.120E+03	0.208E+02	0.775E+02	0.193E+10	0.444E-01	0.856E+08
0.140E+03	0.204E+02	0.725E+02	0.184E+10	0.434E-01	0.801E+08
0.160E+03	0.199E+02	0.628E+02	0.177E+10	0.392E-01	0.693E+08
0.180E+03	0.195E+02	0.500E+02	0.169E+10	0.326E-01	0.551E+08
0.200E+03	0.192E+02	0.395E+02	0.164E+10	0.265E-01	0.435E+08
0.220E+03	0.190E+02	0.323E+02	0.160E+10	0.222E-01	0.355E+08
0.240E+03	0.187E+02	0.280E+02	0.156E+10	0.198E-01	0.308E+08
0.260E+03	0.185E+02	0.263E+02	0.152E+10	0.190E-01	0.289E+08
0.280E+03	0.182E+02	0.285E+02	0.147E+10	0.213E-01	0.314E+08
0.300E+03	0.181E+02	0.313E+02	0.145E+10	0.237E-01	0.344E+08
0.318E+03	0.171E+02	0.610E+02	0.130E+10	0.514E-01	0.670E+08
0.324E+03	0.158E+02	0.110E+03	0.110E+10	0.109E+00	0.121E+09
0.328E+03	0.145E+02	0.161E+03	0.928E+09	0.189E+00	0.176E+09
0.330E+03	0.135E+02	0.192E+03	0.799E+09	0.260E+00	0.207E+09
0.332E+03	0.124E+02	0.218E+03	0.673E+09	0.348E+00	0.234E+09
0.334E+03	0.112E+02	0.231E+03	0.536E+09	0.459E+00	0.246E+09
0.336E+03	0.921E+01	0.224E+03	0.356E+09	0.655E+00	0.233E+09
0.338E+03	0.754E+01	0.190E+03	0.229E+09	0.829E+00	0.190E+09
0.340E+03	0.539E+01	0.141E+03	0.104E+09	0.121E+01	0.125E+09
0.342E+03	0.475E+01	0.903E+02	0.743E+08	0.992E+00	0.737E+08
0.344E+03	0.388E+01	0.510E+02	0.402E+08	0.842E+00	0.328E+08
0.346E+03	0.336E+01	0.303E+02	0.234E+08	0.664E+00	0.155E+08
0.348E+03	0.289E+01	0.150E+02	0.100E+08	0.446E+00	0.447E+07
0.350E+03	0.267E+01	0.625E+01	0.466E+07	0.217E+00	0.101E+07

11/2/82
RUN581

XU218G AGED 100HR@300C

(L/T RATIO = 5.619)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.007620 THICK=0.001130 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.800E+02	0.203E+02	0.378E+02	0.170E+10	0.227E-01	0.386E+08
-0.600E+02	0.199E+02	0.378E+02	0.163E+10	0.236E-01	0.385E+08
-0.400E+02	0.196E+02	0.370E+02	0.158E+10	0.239E-01	0.377E+08
-0.200E+02	0.194E+02	0.380E+02	0.155E+10	0.250E-01	0.388E+08
0.000E+00	0.192E+02	0.393E+02	0.152E+10	0.264E-01	0.400E+08
0.200E+02	0.189E+02	0.403E+02	0.147E+10	0.279E-01	0.410E+08
0.400E+02	0.187E+02	0.430E+02	0.144E+10	0.305E-01	0.438E+08
0.600E+02	0.183E+02	0.468E+02	0.137E+10	0.347E-01	0.476E+08
0.800E+02	0.180E+02	0.478E+02	0.133E+10	0.366E-01	0.486E+08
0.100E+03	0.176E+02	0.475E+02	0.127E+10	0.381E-01	0.483E+08
0.120E+03	0.173E+02	0.458E+02	0.122E+10	0.380E-01	0.465E+08
0.140E+03	0.170E+02	0.420E+02	0.118E+10	0.360E-01	0.426E+08
0.160E+03	0.167E+02	0.368E+02	0.114E+10	0.327E-01	0.373E+08
0.180E+03	0.164E+02	0.310E+02	0.110E+10	0.286E-01	0.314E+08
0.200E+03	0.162E+02	0.263E+02	0.107E+10	0.248E-01	0.266E+08
0.220E+03	0.161E+02	0.225E+02	0.106E+10	0.215E-01	0.228E+08
0.240E+03	0.159E+02	0.205E+02	0.103E+10	0.201E-01	0.207E+08
0.260E+03	0.158E+02	0.195E+02	0.101E+10	0.195E-01	0.197E+08
0.280E+03	0.156E+02	0.193E+02	0.992E+09	0.196E-01	0.195E+08
0.300E+03	0.154E+02	0.228E+02	0.964E+09	0.238E-01	0.230E+08
0.320E+03	0.150E+02	0.378E+02	0.915E+09	0.416E-01	0.381E+08
0.328E+03	0.142E+02	0.695E+02	0.814E+09	0.858E-01	0.699E+08
0.334E+03	0.129E+02	0.132E+03	0.665E+09	0.199E+00	0.132E+09
0.336E+03	0.120E+02	0.145E+03	0.580E+09	0.249E+00	0.144E+09
0.338E+03	0.113E+02	0.151E+03	0.504E+09	0.296E+00	0.149E+09
0.340E+03	0.106E+02	0.154E+03	0.441E+09	0.342E+00	0.151E+09
0.342E+03	0.971E+01	0.150E+03	0.369E+09	0.394E+00	0.145E+09
0.344E+03	0.900E+01	0.143E+03	0.313E+09	0.437E+00	0.137E+09
0.346E+03	0.831E+01	0.133E+03	0.263E+09	0.475E+00	0.125E+09
0.348E+03	0.757E+01	0.119E+03	0.214E+09	0.514E+00	0.110E+09
0.350E+03	0.693E+01	0.101E+03	0.175E+09	0.522E+00	0.913E+08
0.352E+03	0.641E+01	0.803E+02	0.146E+09	0.484E+00	0.708E+08
0.354E+03	0.600E+01	0.625E+02	0.125E+09	0.431E+00	0.538E+08
0.356E+03	0.571E+01	0.483E+02	0.111E+09	0.367E+00	0.406E+08
0.360E+03	0.532E+01	0.303E+02	0.929E+08	0.265E+00	0.246E+08
0.366E+03	0.501E+01	0.185E+02	0.794E+08	0.183E+00	0.145E+08
0.382E+03	0.472E+01	0.123E+02	0.677E+08	0.136E+00	0.922E+07
0.398E+03	0.454E+01	0.975E+01	0.604E+08	0.117E+00	0.710E+07
0.418E+03	0.444E+01	0.700E+01	0.567E+08	0.881E-01	0.500E+07
0.434E+03	0.424E+01	0.525E+01	0.495E+08	0.725E-01	0.359E+07

9/7/82
RUN463

PMMA CALIBRATION (LENGTH = .75 INCHES, AMP = .1) FLEX

(L/T RATIO = 10.525)

SAMPLE DIMENSIONS
LENGTH=0.019050 WIDTH=0.011000 THICK=0.001810 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.225E+02	0.738E+02	0.426E+10	0.723E-01	0.308E+09
0.400E+02	0.215E+02	0.740E+02	0.389E+10	0.793E-01	0.308E+09
0.540E+02	0.203E+02	0.708E+02	0.346E+10	0.849E-01	0.294E+09
0.640E+02	0.193E+02	0.668E+02	0.310E+10	0.893E-01	0.277E+09
0.740E+02	0.182E+02	0.605E+02	0.277E+10	0.905E-01	0.251E+09
0.840E+02	0.172E+02	0.538E+02	0.246E+10	0.902E-01	0.222E+09
0.920E+02	0.163E+02	0.508E+02	0.220E+10	0.953E-01	0.209E+09
0.980E+02	0.152E+02	0.525E+02	0.192E+10	0.112E+00	0.216E+09
0.102E+03	0.143E+02	0.563E+02	0.169E+10	0.136E+00	0.230E+09
0.106E+03	0.131E+02	0.648E+02	0.140E+10	0.188E+00	0.264E+09
0.108E+03	0.123E+02	0.705E+02	0.124E+10	0.231E+00	0.286E+09
0.110E+03	0.114E+02	0.753E+02	0.105E+10	0.287E+00	0.303E+09
0.112E+03	0.104E+02	0.785E+02	0.873E+09	0.358E+00	0.313E+09
0.114E+03	0.923E+01	0.783E+02	0.672E+09	0.456E+00	0.307E+09
0.116E+03	0.813E+01	0.743E+02	0.510E+09	0.558E+00	0.284E+09
0.118E+03	0.697E+01	0.658E+02	0.362E+09	0.670E+00	0.243E+09
0.120E+03	0.591E+01	0.548E+02	0.245E+09	0.777E+00	0.191E+09
0.122E+03	0.489E+01	0.423E+02	0.151E+09	0.877E+00	0.133E+09
0.124E+03	0.410E+01	0.300E+02	0.909E+08	0.885E+00	0.805E+08
0.126E+03	0.329E+01	0.193E+02	0.398E+08	0.884E+00	0.352E+08
0.128E+03	0.259E+01	0.975E+01	0.482E+07	0.723E+00	0.349E+07

9/7/82
RUN464

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A. = .2

(L/T RATIO = 10.133)

SAMPLE DIMENSIONS

LENGTH=0.019050 WIDTH=0.010800 THICK=0.001880 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.230E+02	0.153E+03	0.406E+10	0.713E-01	0.290E+09
0.380E+02	0.218E+02	0.156E+03	0.363E+10	0.815E-01	0.296E+09
0.520E+02	0.206E+02	0.152E+03	0.322E+10	0.889E-01	0.287E+09
0.620E+02	0.194E+02	0.142E+03	0.286E+10	0.936E-01	0.268E+09
0.720E+02	0.184E+02	0.131E+03	0.257E+10	0.963E-01	0.247E+09
0.820E+02	0.172E+02	0.120E+03	0.225E+10	0.100E+00	0.225E+09
0.900E+02	0.161E+02	0.116E+03	0.196E+10	0.111E+00	0.217E+09
0.920E+02	0.152E+02	0.116E+03	0.174E+10	0.124E+00	0.217E+09
0.940E+02	0.143E+02	0.116E+03	0.154E+10	0.141E+00	0.217E+09
0.960E+02	0.134E+02	0.118E+03	0.135E+10	0.162E+00	0.218E+09
0.980E+02	0.125E+02	0.120E+03	0.117E+10	0.189E+00	0.221E+09
0.100E+03	0.116E+02	0.124E+03	0.100E+10	0.226E+00	0.226E+09
0.104E+03	0.108E+02	0.137E+03	0.858E+09	0.290E+00	0.249E+09
0.108E+03	0.999E+01	0.148E+03	0.725E+09	0.367E+00	0.266E+09
0.112E+03	0.901E+01	0.149E+03	0.581E+09	0.455E+00	0.264E+09
0.114E+03	0.849E+01	0.142E+03	0.510E+09	0.489E+00	0.249E+09
0.116E+03	0.749E+01	0.130E+03	0.387E+09	0.575E+00	0.222E+09
0.118E+03	0.649E+01	0.112E+03	0.277E+09	0.664E+00	0.184E+09
0.120E+03	0.548E+01	0.900E+02	0.185E+09	0.743E+00	0.137E+09
0.122E+03	0.455E+01	0.660E+02	0.113E+09	0.791E+00	0.892E+08
0.124E+03	0.372E+01	0.480E+02	0.597E+08	0.860E+00	0.513E+08
0.126E+03	0.322E+01	0.320E+02	0.328E+08	0.765E+00	0.251E+08
0.128E+03	0.287E+01	0.200E+02	0.163E+08	0.602E+00	0.983E+07

9/7/82
RUN466

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A. = .3

(L/T RATIO = 10.133)

SAMPLE DIMENSIONS
LENGTH=0.019050 WIDTH=0.010820 THICK=0.001880 OSC AMP=0.15

POINT BY POINT VALUES·

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.234E+02	0.230E+03	0.418E+10	0.695E-01	0.291E+09
0.380E+02	0.222E+02	0.233E+03	0.375E+10	0.781E-01	0.293E+09
0.520E+02	0.209E+02	0.225E+03	0.333E+10	0.851E-01	0.284E+09
0.620E+02	0.198E+02	0.212E+03	0.299E+10	0.892E-01	0.267E+09
0.740E+02	0.186E+02	0.189E+03	0.264E+10	0.898E-01	0.237E+09
0.840E+02	0.175E+02	0.173E+03	0.232E+10	0.931E-01	0.216E+09
0.920E+02	0.164E+02	0.165E+03	0.204E+10	0.101E+00	0.205E+09
0.980E+02	0.153E+02	0.167E+03	0.176E+10	0.118E+00	0.207E+09
0.102E+03	0.144E+02	0.174E+03	0.155E+10	0.139E+00	0.216E+09
0.106E+03	0.132E+02	0.189E+03	0.130E+10	0.179E+00	0.232E+09
0.108E+03	0.125E+02	0.197E+03	0.115E+10	0.209E+00	0.241E+09
0.110E+03	0.116E+02	0.205E+03	0.998E+09	0.250E+00	0.250E+09
0.112E+03	0.107E+02	0.210E+03	0.839E+09	0.302E+00	0.253E+09
0.114E+03	0.954E+01	0.208E+03	0.655E+09	0.378E+00	0.248E+09
0.116E+03	0.844E+01	0.199E+03	0.503E+09	0.461E+00	0.232E+09
0.118E+03	0.732E+01	0.178E+03	0.367E+09	0.548E+00	0.201E+09
0.120E+03	0.635E+01	0.153E+03	0.264E+09	0.627E+00	0.166E+09
0.122E+03	0.554E+01	0.125E+03	0.189E+C9	0.671E+00	0.127E+09
0.124E+03	0.478E+01	0.973E+02	0.129E+C9	0.705E+00	0.908E+08
0.126E+03	0.415E+01	0.693E+02	0.857E+08	0.665E+00	0.570E+08
0.128E+03	0.363E+01	0.460E+02	0.542E+08	0.579E+00	0.313E+08
0.130E+03	0.316E+01	0.288E+02	0.299E+08	0.475E+00	0.142E+08
0.132E+03	0.284E+01	0.158E+02	0.149E+08	0.323E+00	0.481E+07

9/7/82
RUN467

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A. = .4

(L/T RATIO = 10.133)

SAMPLE DIMENSIONS

LENGTH=0.019050 WIDTH=0.010820 THICK=0.001880 OSC AMP=0.20

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.225E+02	0.310E+03	0.368E+10	0.755E-01	0.293E+09
0.360E+02	0.214E+02	0.309E+03	0.349E+10	0.835E-01	0.291E+09
0.520E+02	0.203E+02	0.296E+03	0.314E+10	0.889E-01	0.279E+09
0.620E+02	0.192E+02	0.275E+03	0.281E+10	0.921E-01	0.259E+09
0.720E+02	0.182E+02	0.249E+03	0.252E+10	0.927E-01	0.234E+09
0.820E+02	0.171E+02	0.225E+03	0.222E+10	0.947E-01	0.211E+09
0.900E+02	0.162E+02	0.212E+03	0.197E+10	0.100E+00	0.198E+09
0.960E+02	0.152E+02	0.211E+03	0.174E+10	0.113E+00	0.196E+09
0.100E+03	0.144E+02	0.218E+03	0.156E+10	0.130E+00	0.203E+09
0.104E+03	0.134E+02	0.235E+03	0.133E+10	0.163E+00	0.217E+09
0.108E+03	0.119E+02	0.258E+03	0.105E+10	0.225E+00	0.236E+09
0.110E+03	0.111E+02	0.267E+03	0.908E+09	0.267E+00	0.243E+09
0.112E+03	0.102E+02	0.272E+03	0.756E+09	0.324E+00	0.245E+09
0.114E+03	0.910E+01	0.268E+03	0.592E+09	0.401E+00	0.237E+09
0.116E+03	0.810E+01	0.253E+03	0.459E+09	0.479E+00	0.220E+09
0.118E+03	0.709E+01	0.229E+03	0.341E+09	0.565E+00	0.192E+09
0.120E+03	0.609E+01	0.194E+03	0.239E+09	0.649E+00	0.155E+09
0.122E+03	0.519E+01	0.154E+03	0.161E+09	0.711E+00	0.114E+09
0.124E+03	0.443E+01	0.116E+03	0.104E+09	0.733E+00	0.762E+08
0.126E+03	0.389E+01	0.830E+02	0.694E+08	0.681E+00	0.473E+08
0.128E+03	0.339E+01	0.580E+02	0.413E+08	0.627E+00	0.259E+08
0.130E+03	0.306E+01	0.375E+02	0.251E+08	0.496E+00	0.125E+08
0.132E+03	0.279E+01	0.223E+02	0.127E+08	0.355E+00	0.450E+07

9/7/82
RUN469

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A = .5

(L/T RATIO = 10.187)

SAMPLE DIMENSIONS
LENGTH=0.019050 WIDTH=0.010800 THICK=0.001970 OSC AMP=0.25

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.227E+02	0.399E+03	0.399E+10	0.771E-01	0.308E+09
0.380E+02	0.215E+02	0.396E+03	0.357E+10	0.853E-01	0.305E+09
0.540E+02	0.203E+02	0.368E+03	0.319E+10	0.887E-01	0.283E+09
0.640E+02	0.192E+02	0.335E+03	0.286E+10	0.897E-01	0.257E+09
0.760E+02	0.182E+02	0.296E+03	0.256E+10	0.883E-01	0.226E+09
0.860E+02	0.171E+02	[illegible]	0.226E+10	0.903E-01	0.204E+09
0.940E+02	0.161E+02	0.255E+03	0.200E+10	0.974E-01	0.194E+09
0.100E+03	0.150E+02	0.266E+03	0.172E+10	0.117E+00	0.202E+09
0.104E+03	0.138E+02	0.294E+03	0.145E+10	0.152E+00	0.222E+09
0.106E+03	0.131E+02	0.315E+03	0.131E+10	0.181E+00	0.237E+09
0.108E+03	0.122E+02	0.337E+03	0.113E+10	0.224E+00	0.252E+09
0.110E+03	0.113E+02	0.355E+03	0.947E+09	0.278E+00	0.263E+09
0.112E+03	0.102E+02	0.362E+03	0.776E+09	0.342E+00	0.265E+09
0.114E+03	0.890E+01	0.351E+03	0.575E+09	0.440E+00	0.253E+09
0.116E+03	0.771E+01	0.323E+03	0.420E+09	0.538E+00	0.226E+09
0.118E+03	0.660E+01	0.279E+03	0.294E+09	0.634E+00	0.187E+09
0.120E+03	0.559E+01	0.224E+03	0.197E+09	0.712E+00	0.141E+09
0.122E+03	0.472E+01	0.170E+03	0.127E+09	0.755E+00	0.962E+08
0.124E+03	0.409E+01	0.123E+03	0.832E+08	0.729E+00	0.606E+08
0.126E+03	0.359E+01	0.860E+02	0.530E+08	0.663E+00	0.352E+08
0.128E+03	0.316E+01	0.583E+02	0.304E+08	0.578E+00	0.176E+08
0.130E+03	0.288E+01	0.383E+02	0.168E+08	0.459E+00	0.772E+07
0.132E+03	0.260E+01	0.238E+02	0.499E+07	0.348E+00	0.174E+07
0.134E+03	0.249E+01	0.135E+02	0.467E+06	0.217E+00	0.101E+06

9/7/82
RUN470

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A. = .6

(L/T RATIO = 10.187)

SAMPLE DIMENSIONS
LENGTH=0.01[illegible]050 WIDTH=0.01[illegible]800 THICK=0.001370 OSC AMP=0.30

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.224E+02	0.490E+03	0.390E+10	0.806E-01	0.314E+09
0.380E+02	0.212E+02	0.481E+03	0.349E+10	0.884E-01	0.308E+09
0.640E+02	0.186E+02	0.414E+03	0.269E+10	0.984E-01	0.264E+09
0.740E+02	0.176E+02	0.377E+03	0.239E+10	0.100E+00	0.240E+09
0.840E+02	0.167E+02	0.349E+03	0.215E+10	0.10[illegible]E+00	0.222E+09
0.920E+02	0.158E+02	0.334E+03	0.190E+10	0.111E+00	0.211E+09
0.980E+02	0.149E+02	0.336E+03	0.169E+10	0.125E+00	0.212E+09
0.104E+03	0.136E+02	0.363E+03	0.141E+10	0.161E+00	0.228E+09
0.108E+03	0.123E+02	0.398E+03	0.113E+10	0.219E+00	0.248E+09
0.110E+03	0.114E+02	0.414E+03	0.974E+09	0.263E+00	0.257E+09
0.112E+03	0.105E+02	0.422E+03	0.821E+09	0.316E+00	0.259E+09
0.114E+03	0.944E+01	0.418E+03	0.652E+09	0.387E+00	0.253E+09
0.116E+03	0.844E+01	0.397E+03	0.512E+09	0.460E+00	0.235E+09
0.118E+03	0.739E+01	0.360E+03	0.381E+09	0.545E+00	0.207E+09
0.120E+03	0.644E+01	0.309E+03	0.278E+09	0.615E+00	0.171E+09
0.122E+03	0.555E+01	0.250E+03	0.194E+09	0.670E+00	0.130E+09
0.124E+03	0.461E+01	0.188E+03	0.119E+09	0.731E+00	0.871E+08
0.126E+03	0.400E+01	0.138E+03	0.776E+08	0.712E+00	0.552E+08
0.128E+03	0.349E+01	0.955E+02	0.474E+08	0.649E+00	0.308E+08
0.130E+03	0.317E+01	0.665E+02	0.311E+08	0.545E+00	0.170E+08
0.132E+03	0.288E+01	0.450E+02	0.168E+08	0.450E+00	0.757E+07
0.134E+03	0.269E+01	0.290E+02	0.864E+07	0.332E+00	0.287E+07

9/7/82
RUN471

PMMA CALIBRATION (LENGTH = .75 INCHES) O.A = .8

(L/T RATIO = 10.187)

SAMPLE DIMENSIONS
LENGTH=0.019050 WIDTH=0.010800 THICK=0.001870 OSC AMP=0.40

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.220E+02	0.656E+03	0.374E+10	0.844E-01	0.316E+09
0.400E+02	0.210E+02	0.637E+03	0.343E+10	0.893E-01	0.306E+09
0.540E+02	0.200E+02	0.606E+03	0.308E+10	0.943E-01	0.291E+09
0.640E+02	0.189E+02	0.564E+03	0.277E+10	0.974E-01	0.270E+09
0.740E+02	0.178E+02	0.522E+03	0.245E+10	0.102E+00	0.249E+09
0.820E+02	0.168E+02	0.489E+03	0.218E+10	0.107E+00	0.233E+09
0.900E+02	0.157E+02	0.463E+03	0.190E+10	0.116E+00	0.220E+09
0.960E+02	0.148E+02	0.456E+03	0.168E+10	0.128E+00	0.216E+09
0.100E+03	0.139E+02	0.463E+03	0.148E+10	0.148E+00	0.218E+09
0.104E+03	0.129E+02	0.489E+03	0.125E+10	0.184E+00	0.229E+09
0.108E+03	0.114E+02	0.527E+03	0.980E+09	0.250E+00	0.245E+09
0.110E+03	0.106E+02	0.540E+03	0.844E+09	0.295E+00	0.249E+09
0.112E+03	0.970E+01	0.542E+03	0.692E+09	0.357E+00	0.247E+09
0.114E+03	0.875E+01	0.529E+03	0.554E+09	0.428E+00	0.237E+09
0.116E+03	0.779E+01	0.495E+03	0.429E+09	0.506E+00	0.217E+09
0.118E+03	0.680E+01	0.442E+03	0.315E+09	0.593E+00	0.187E+09
0.120E+03	0.590E+01	0.374E+03	0.225E+09	0.666E+00	0.150E+09
0.122E+03	0.510E+01	0.299E+03	0.156E+09	0.711E+00	0.111E+09
0.124E+03	0.441E+01	0.227E+03	0.105E+09	0.723E+00	0.758E+08
0.126E+03	0.389E+01	0.166E+03	0.707E+08	0.679E+00	0.480E+08
0.128E+03	0.340E+01	0.118E+03	0.427E+08	0.630E+00	0.269E+08
0.130E+03	0.308E+01	0.815E+02	0.262E+08	0.534E+00	0.140E+08
0.132E+03	0.286E+01	0.555E+02	0.162E+08	0.420E+00	0.682E+07
0.134E+03	0.269E+01	0.378E+02	0.864E+07	0.324E+00	0.280E+07
0.136E+03	0.259E+01	0.245E+02	0.450E+07	0.227E+00	0.102E+07

9/7/82
RUN472

PMMA CALIBRATION (LENGTH = .75 INCHES) O A. = 1.0

(L/T RATIO = 10.187)

SAMPLE DIMENSIONS

LENGTH=0.019050 WIDTH=0.010900 THICK=0.001870 OSC AMP=0.50

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E-02	0.217E+02	0.766E+03	0.364E+10	0.809E-01	0.295E+09
0.380E+02	0.205E+02	0.771E+03	0.326E+10	0.908E-01	0.296E+09
0.520E+02	0.195E+02	0.732E+03	0.293E+10	0.960E-01	0.281E+09
0.640E-02	0.185E+02	0.670E+03	0.263E+10	0.975E-01	0.256E+09
0.760E+02	0.174E+02	0.596E+03	0.234E+10	0.973E-01	0.228E+09
0.860E+02	0.164E+02	0.540E+03	0.208E+10	0.991E-01	0.206E+09
0.940E+02	0.153E+02	0.522E+03	0.179E+10	0.111E+00	0.198E+09
0.100E+03	0.141E+02	0.546E+03	0.153E+10	0.135E+00	0.206E+09
0.104E+03	0.130E+02	0.593E+03	0.129E+10	0.173E+00	0.223E+09
0.108E+03	0.116E+02	0.656E+03	0.102E+10	0.240E+00	0.244E+09
0.110E+03	0.108E+02	0.681E+03	0.862E+09	0.292E+00	0.251E+09
0.112E+03	0.966E+01	0.688E+03	0.686E+09	0.365E+00	0.251E+09
0.114E+03	0.851E+01	0.668E+03	0.521E+09	0.457E+00	0.239E+09
0.116E-03	0.750E+01	0.617E+03	0.394E+09	0.544E+00	0.214E+09
0.118E+03	0.650E+01	0.538E+03	0.284E+09	0.632E+00	0.179E+09
0.120E+03	0.550E+01	0.435E+03	0.190E+09	0.714E+00	0.135E+09
0.122E+03	0.471E+01	0.331E+03	0.126E+09	0.739E+00	0.924E+08
0.124E+03	0.409E+01	0.243E+03	0.832E+08	0.721E+00	0.600E+08
0.126E+03	0.358E+01	0.172E+03	0.523E+08	0.667E+00	0.349E+08
0.128E+03	0.325E+01	0.121E+03	0.349E+08	0.568E+00	0.198E+08
0.130E+03	0.299E+01	0.863E+02	0.220E+08	0.479E+00	0.105E+08
0.132E+03	0.279E+01	0.605E+02	0.129E+08	0.386E+00	0.499E+07
0.134E+03	0.261E+01	0.425E+02	0.548E+07	0.309E+00	0.169E+07

10/29/82
RUN691

BUYTL 10oo 100PHR 6894 GRAPHITE 68PHR, CARBON BLACK 2.5PHR;

(L/T RATIO = 4.504)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.008670 THICK=0.001410 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.570E+02	0.460E+03	0.613E+10	0.351E-01	0.215E+09
-0.100E+03	0.560E+02	0.925E+03	0.592E+10	0.731E-01	0.433E+09
-0.820E+02	0.531E+02	0.980E+03	0.533E+10	0.861E-01	0.458E+09
-0.720E+02	0.495E+02	0.143E+04	0.462E+10	0.145E+00	0.670E+09
-0.680E+02	0.448E+02	0.192E+04	0.378E+10	0.237E+00	0.895E+09
-0.660E+02	0.415E+02	0.211E+04	0.325E+10	0.303E+00	0.984E+09
-0.640E+02	0.378E+02	0.212E+04	0.268E+10	0.368E+00	0.988E+09
-0.620E+02	0.340E+02	0.212E+04	0.217E+10	0.455E+00	0.989E+09
-0.600E+02	0.295E+02	0.212E+04	0.163E+10	0.603E+00	0.985E+09
-0.580E+02	0.264E+02	0.181E+04	0.130E+10	0.645E+00	0.841E+09
-0.560E+02	0.236E+02	0.160E+04	0.104E+10	0.709E+00	0.740E+09
-0.540E+02	0.215E+02	0.139E+04	0.863E+09	0.743E+00	0.641E+09
-0.520E+02	0.196E+02	0.121E+04	0.717E+09	0.777E+00	0.557E+09
-0.500E+02	0.183E+02	0.106E+04	0.618E+09	0.785E+00	0.486E+09
-0.480E+02	0.168E+02	0.933E+03	0.519E+09	0.824E+00	0.428E+09
-0.460E+02	0.153E+02	0.803E+03	0.428E+09	0.856E+00	0.366E+09
-0.440E+02	0.139E+02	0.695E+03	0.353E+09	0.895E+00	0.316E+09
-0.420E+02	0.125E+02	0.590E+03	0.284E+09	0.936E+00	0.266E+09
-0.400E+02	0.113E+02	0.495E+03	0.228E+09	0.970E+00	0.221E+09
-0.380E+02	0.101E+02	0.413E+03	0.182E+09	0.998E+00	0.182E+09
-0.360E+02	0.913E+01	0.340E+03	0.146E+09	0.101E+01	0.148E+09
-0.340E+02	0.825E+01	0.283E+03	0.117E+09	0.103E+01	0.121E+09
-0.320E+02	0.775E+01	0.235E+03	0.102E+09	0.970E+00	0.990E+08
-0.300E+02	0.713E+01	0.195E+03	0.844E+08	0.953E+00	0.804E+08
-0.280E+02	0.663E+01	0.165E+03	0.714E+08	0.932E+00	0.666E+08
-0.240E+02	0.600E+01	0.133E+03	0.565E+08	0.913E+00	0.516E+08
-0.200E+02	0.550E+01	0.103E+03	0.456E+08	0.840E+00	0.383E+08
-0.160E+02	0.525E+01	0.800E+02	0.405E+08	0.720E+00	0.292E+08
-0.140E+02	0.500E+01	0.675E+02	0.357E+08	0.670E+00	0.239E+08
-0.800E+01	0.475E+01	0.500E+02	0.311E+08	0.550E+00	0.171E+08
-0.600E+01	0.450E+01	0.450E+02	0.267E+08	0.551E+00	0.147E+08
-0.200E+01	0.425E+01	0.375E+02	0.226E+08	0.515E+00	0.116E+08
0.600E+01	0.388E+01	0.200E+02	0.168E+08	0.330E+00	0.555E+07
0.800E+01	0.375E+01	0.175E+02	0.150E+08	0.309E+00	0.463E+07
0.100E+02	0.363E+01	0.150E+02	0.133E+08	0.283E+00	0.376E+07
0.140E+02	0.350E+01	0.125E+02	0.116E+08	0.253E+00	0.293E+07
0.200E+02	0.338E+01	0.750E+01	0.996E+07	0.163E+00	0.163E+07
0.260E+02	0.325E+01	0.700E+01	0.839E+07	0.164E+00	0.138E+07
0.340E+02	0.313E+01	0.400E+01	0.688E+07	0.102E+00	0.699E+06
0.420E+02	0.300E+01	0.250E+01	0.544E+07	0.689E-01	0.374E+06

10/29/82
RUN692

BUYTL 10cA 100PHR 6894 GRAPHITE 68PHR; CARBON BLACK 2.5PHR;

(L/T RATIO = 4.320)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.008590 THICK=0.001470 OSC AMP=0.20

FOINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.564E+02	0.146E+04	0.534E+10	0.570E-01	0.304E+09
-0.100E+03	0.550E+02	0.171E+04	0.509E+10	0.701E-01	0.356E+09
-0.860E+02	0.521E+02	0.218E+04	0.457E+10	0.995E-01	0.454E+09
-0.800E+02	0.488E+02	0.274E+04	0.399E+10	0.143E+00	0.571E+09
-0.760E+02	0.454E+02	0.318E+04	0.346E+10	0.192E+00	0.663E+09
-0.720E+02	0.406E+02	0.335E+04	0.277E+10	0.252E+00	0.697E+09
-0.700E+02	0.376E+02	0.334E+04	0.237E+10	0.293E+00	0.695E+09
-0.680E+02	0.348E+02	0.334E+04	0.202E+10	0.342E+00	0.693E+09
-0.660E+02	0.310E+02	0.331E+04	0.161E+10	0.427E+00	0.686E+09
-0.640E+02	0.281E+02	0.294E+04	0.132E+10	0.461E+00	0.610E+09
-0.620E+02	0.255E+02	0.269E+04	0.109E+10	0.513E+00	0.557E+09
-0.600E+02	0.231E+02	0.244E+04	0.891E+09	0.566E+00	0.504E+09
-0.580E+02	0.209E+02	0.216E+04	0.724E+09	0.615E+00	0.445E+09
-0.560E+02	0.190E+02	0.190E+04	0.598E+09	0.652E+00	0.390E+09
-0.540E+02	0.175E+02	0.167E+04	0.506E+09	0.676E+00	0.342E+09
-0.520E+02	0.160E+02	0.148E+04	0.421E+09	0.718E+00	0.302E+09
-0.500E+02	0.151E+02	0.134E+04	0.375E+09	0.728E+00	0.273E+09
-0.480E+02	0.140E+02	0.123E+04	0.320E+09	0.777E+00	0.248E+09
-0.460E+02	0.130E+02	0.112E+04	0.274E+09	0.822E+00	0.225E+09
-0.440E+02	0.120E+02	0.102E+04	0.232E+09	0.876E+00	0.203E+09
-0.420E+02	0.110E+02	0.910E+03	0.194E+09	0.932E+00	0.180E+09
-0.400E+02	0.101E+02	0.790E+03	0.162E+09	0.955E+00	0.155E+09
-0.380E+02	0.913E+01	0.675E+03	0.130E+09	0.101E+01	0.131E+09
-0.360E+02	0.838E+01	0.575E+03	0.108E+09	0.102E+01	0.110E+09
-0.340E+02	0.788E+01	0.485E+03	0.942E+08	0.970E+00	0.913E+08
-0.320E+02	0.725E+01	0.408E+03	0.782E+08	0.961E+00	0.752E+08
-0.300E+02	0.663E+01	0.338E+03	0.636E+08	0.953E+00	0.607E+08
-0.280E+02	0.613E+01	0.285E+03	0.529E+08	0.942E+00	0.498E+08
-0.240E+02	0.550E+01	0.225E+03	0.406E+08	0.922E+00	0.375E+08
-0.200E+02	0.513E+01	0.200E+03	0.339E+08	0.944E+00	0.320E+08
-0.180E+02	0.488E+01	0.188E+03	0.297E+08	0.978E+00	0.291E+08
-0.140E+02	0.463E+01	0.158E+03	0.257E+08	0.913E+00	0.235E+08
-0.100E+02	0.445E+01	0.145E+03	0.230E+08	0.908E+00	0.209E+08
0.800E+01	0.425E+01	0.825E+02	0.201E+08	0.566E+00	0.114E+08
0.160E+02	0.400E+01	0.625E+02	0.166E+08	0.484E+00	0.806E+07
0.180E+02	0.375E+01	0.525E+02	0.134E+08	0.463E+00	0.619E+07

10/29/82
RUN699

BUYTL 10ss 100PHR 6894 GRAPHITE 68PHR; CARBON BLACK 2.5PHR;

(L/T RATIO = 4.441)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.008870 THICK=0.001430 OSC AMP=0.30

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.495E+02	0.173E+04	0.433E+10	0.583E-01	0.252E+09
-0.100E+03	0.490E+02	0.193E+04	0.424E+10	0.664E-01	0.282E+09
-0.800E+02	0.476E+02	0.236E+04	0.401E+10	0.860E-01	0.345E+09
-0.720E+02	0.431E+02	0.349E+04	0.328E+10	0.155E+00	0.510E+09
-0.700E+02	0.389E+02	0.410E+04	0.267E+10	0.224E+00	0.597E+09
-0.680E+02	0.339E+02	0.418E+04	0.202E+10	0.301E+00	0.609E+09
-0.660E+02	0.290E+02	0.379E+04	0.148E+10	0.372E+00	0.551E+09
-0.640E+02	0.255E+02	0.322E+04	0.114E+10	0.409E+00	0.467E+09
-0.620E+02	0.206E+02	0.253E+04	0.743E+09	0.492E+00	0.366E+09
-0.600E+02	0.178E+02	0.196E+04	0.547E+09	0.515E+00	0.282E+09
-0.580E+02	0.160E+02	0.169E+04	0.443E+09	0.546E+00	0.242E+09
-0.560E+02	0.146E+02	0.147E+04	0.368E+09	0.567E+00	0.209E+09
-0.540E+02	0.135E+02	0.130E+04	0.312E+09	0.590E+00	0.184E+09
-0.520E+02	0.125E+02	0.116E+04	0.266E+09	0.614E+00	0.163E+09
-0.500E+02	0.116E+02	0.104E+04	0.229E+09	0.636E+00	0.145E+09
-0.480E+02	0.109E+02	0.943E+03	0.199E+09	0.659E+00	0.131E+09
-0.460E+02	0.103E+02	0.868E+03	0.175E+09	0.683E+00	0.120E+09
-0.440E+02	0.938E+01	0.798E+03	0.145E+09	0.750E+00	0.109E+09
-0.420E+02	0.863E+01	0.728E+03	0.121E+09	0.808E+00	0.978E+08
-0.400E+02	0.800E+01	0.653E+03	0.103E+09	0.843E+00	0.864E+08
-0.380E+02	0.750E+01	0.575E+03	0.868E+08	0.845E+00	0.751E+08
-0.360E+02	0.686E+01	0.500E+03	0.729E+08	0.874E+00	0.638E+08
-0.340E+02	0.633E+01	0.433E+03	0.612E+08	0.880E+00	0.538E+08
-0.320E+02	0.588E+01	0.363E+03	0.503E+08	0.868E+00	0.437E+08
-0.300E+02	0.550E+01	0.308E+03	0.428E+08	0.840E+00	0.359E+08
-0.280E+02	0.513E+01	0.260E+03	0.357E+08	0.818E+00	0.292E+08
-0.260E+02	0.488E+01	0.223E+03	0.313E+08	0.774E+00	0.242E+08
-0.240E+02	0.463E+01	0.193E+03	0.271E+08	0.744E+00	0.201E+08
-0.220E+02	0.413E+01	0.145E+03	0.193E+08	0.704E+00	0.136E+08
-0.200E+02	0.375E+01	0.105E+03	0.141E+08	0.617E+00	0.868E+07
-0.180E+02	0.363E+01	0.825E+02	0.124E+08	0.519E+00	0.645E+07
-0.160E+02	0.338E+01	0.650E+02	0.933E+07	0.472E+00	0.440E+07
-0.140E+02	0.325E+01	0.550E+02	0.786E+07	0.430E+00	0.338E+07
-0.120E+02	0.313E+01	0.450E+02	0.645E+07	0.381E+00	0.246E+07
-0.800E+01	0.300E+01	0.325E+02	0.509E+07	0.298E+00	0.152E+07
-0.400E+01	0.288E+01	0.225E+02	0.379E+07	0.225E+00	0.853E+06
0.000E+00	0.275E+01	0.175E+02	0.255E+07	0.191E+00	0.487E+06
0.800E+01	0.270E+01	0.750E+01	0.206E+07	0.850E-01	0.175E+06
0.120E+02	0.263E+01	0.500E+01	0.136E+07	0.600E-01	0.813E+05
0.160E+02	0.260E+01	0.250E+01	0.112E+07	0.306E-01	0.344E+05

10/29/82
RUN700

BUYTL 1066 100PHR 6894 GRAPHITE 68PHR, CARBON BLACK 2.5PHR,

(L/T RATIO = 4.568)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.008530 THICK=0.001390 OSC AMP=0.40

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.470E+02	0.257E+04	0.442E+10	0.721E-01	0.319E+09
-0.100E+03	0.460E+02	0.293E+04	0.423E+10	0.859E-01	0.364E+09
-0.840E+02	0.435E+02	0.363E+04	0.378E+10	0.119E+00	0.449E+09
-0.780E+02	0.405E+02	0.428E+04	0.328E+10	0.162E+00	0.520E+09
-0.740E+02	0.373E+02	0.473E+04	0.277E+10	0.211E+00	0.585E+09
-0.720E+02	0.351E+02	0.484E+04	0.246E+10	0.243E+00	0.599E+09
-0.700E+02	0.323E+02	0.491E+04	0.207E+10	0.293E+00	0.607E+09
-0.680E+02	0.293E+02	0.449E+04	0.170E+10	0.325E+00	0.554E+09
-0.660E+02	0.265E+02	0.397E+04	0.140E+10	0.350E+00	0.489E+09
-0.640E+02	0.238E+02	0.350E+04	0.112E+10	0.385E+00	0.431E+09
-0.620E+02	0.215E+02	0.319E+04	0.915E+09	0.427E+00	0.391E+09
-0.600E+02	0.193E+02	0.280E+04	0.731E+09	0.468E+00	0.342E+09
-0.580E+02	0.174E+02	0.205E+04	0.593E+09	0.421E+00	0.250E+09
-0.560E+02	0.148E+02	0.120E+04	0.424E+09	0.341E+00	0.145E+09
-0.540E+02	0.110E+02	0.901E+03	0.230E+09	0.461E+00	0.106E+09
-0.520E+02	0.982E+01	0.733E+03	0.183E+09	0.466E+00	0.854E+08
-0.500E+02	0.738E+01	0.515E+03	0.968E+08	0.587E+00	0.568E+08
-0.480E+02	0.700E+01	0.483E+03	0.860E+08	0.610E+00	0.525E+08
-0.460E+02	0.650E+01	0.450E+03	0.725E+08	0.660E+00	0.479E+08
-0.420E+02	0.575E+01	0.365E+03	0.540E+08	0.684E+00	0.370E+08
-0.400E+02	0.538E+01	0.323E+03	0.457E+08	0.692E+00	0.316E+08
-0.380E+02	0.500E+01	0.290E+03	0.379E+08	0.719E+00	0.272E+08
-0.360E+02	0.475E+01	0.250E+03	0.330E+08	0.687E+00	0.227E+08
-0.340E+02	0.438E+01	0.213E+03	0.261E+08	0.688E+00	0.180E+08
-0.320E+02	0.413E+01	0.175E+03	0.219E+08	0.638E+00	0.139E+08
-0.300E+02	0.386E+01	0.148E+03	0.178E+08	0.609E+00	0.109E+08
-0.280E+02	0.363E+01	0.125E+03	0.141E+08	0.590E+00	0.830E+07
-0.260E+02	0.350E+01	0.108E+03	0.123E+08	0.544E+00	0.669E+07
-0.240E+02	0.338E+01	0.925E+02	0.106E+08	0.503E+00	0.532E+07
-0.220E+02	0.325E+01	0.775E+02	0.890E+07	0.455E+00	0.405E+07
-0.200E+02	0.313E+01	0.675E+02	0.730E+07	0.429E+00	0.313E+07
-0.180E+02	0.300E+01	0.575E+02	0.577E+07	0.396E+00	0.228E+07
-0.160E+02	0.288E+01	0.475E+02	0.429E+07	0.356E+00	0.153E+07
-0.120E+02	0.275E+01	0.350E+02	0.288E+07	0.287E+00	0.827E+06
-0.800E+01	0.270E+01	0.225E+02	0.234E+07	0.191E+00	0.447E+06
-0.400E+01	0.263E+01	0.175E+02	0.153E+07	0.157E+00	0.242E+06
0.000E+00	0.260E+01	0.100E+02	0.127E+07	0.917E-01	0.117E+06
0.400E+01	0.255E+01	0.750E+01	0.756E+06	0.715E-01	0.541E+05
0.600E+01	0.250E+01	0.500E+01	0.249E+06	0.496E-01	0.124E+05

10/29/82
RUN710

BUYTL 1065 100PHR; 6894 GRAPHITE 68PHR; CARBON BLACK 2.5PHR;

(L/T RATIO = 4.504)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.008480 THICK=0.001410 OSC AMP=0.50

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.485E+02	0.386E+04	0.454E+10	0.814E-01	0.369E+09
-0.100E+03	0.473E+02	0.438E+04	0.431E+10	0.972E-01	0.418E+09
-0.860E+02	0.448E+02	0.526E+04	0.386E+10	0.130E+00	0.502E+09
-0.800E+02	0.410E+02	0.626E+04	0.324E+10	0.185E+00	0.598E+09
-0.760E+02	0.368E+02	0.638E+04	0.260E+10	0.234E+00	0.609E+09
-0.740E+02	0.340E+02	0.634E+04	0.222E+10	0.272E+00	0.605E+09
-0.720E+02	0.309E+02	0.626E+04	0.183E+10	0.325E+00	0.596E+09
-0.700E+02	0.276E+02	0.542E+04	0.146E+10	0.352E+00	0.515E+09
-0.680E+02	0.248E+02	0.482E+04	0.117E+10	0.390E+00	0.458E+09
-0.660E+02	0.225E+02	0.429E+04	0.967E+09	0.420E+00	0.406E+09
-0.640E+02	0.203E+02	0.384E+04	0.781E+09	0.464E+00	0.362E+09
-0.620E+02	0.180E+02	0.340E+04	0.615E+09	0.521E+00	0.320E+09
-0.600E+02	0.161E+02	0.296E+04	0.491E+09	0.564E+00	0.277E+09
-0.580E+02	0.149E+02	0.256E+04	0.416E+09	0.573E+00	0.238E+09
-0.560E+02	0.135E+02	0.223E+04	0.341E+09	0.608E+00	0.207E+09
-0.540E+02	0.124E+02	0.196E+04	0.284E+09	0.634E+00	0.180E+09
-0.520E+02	0.114E+02	0.174E+04	0.238E+09	0.668E+00	0.159E+09
-0.500E+02	0.104E+02	0.158E+04	0.196E+09	0.727E+00	0.143E+09
-0.480E+02	0.950E+01	0.143E+04	0.163E+09	0.784E+00	0.128E+09
-0.460E+02	0.875E+01	0.130E+04	0.136E+09	0.839E+00	0.114E+09
-0.440E+02	0.813E+01	0.116E+04	0.116E+09	0.873E+00	0.101E+09
-0.400E+02	0.725E+01	0.948E+03	0.898E+08	0.894E+00	0.803E+08
-0.380E+02	0.675E+01	0.828E+03	0.763E+08	0.901E+00	0.687E+08
-0.360E+02	0.625E+01	0.703E+03	0.637E+08	0.892E+00	0.568E+08
-0.340E+02	0.575E+01	0.585E+03	0.521E+08	0.878E+00	0.457E+08
-0.320E+02	0.538E+01	0.498E+03	0.440E+08	0.854E+00	0.376E+08
-0.300E+02	0.513E+01	0.433E+03	0.389E+08	0.817E+00	0.318E+08
-0.280E+02	0.488E+01	0.365E+03	0.341E+08	0.762E+00	0.260E+08
-0.260E+02	0.450E+01	0.300E+03	0.273E+08	0.735E+00	0.201E+08
-0.240E+02	0.425E+01	0.238E+03	0.231E+08	0.652E+00	0.151E+08
-0.220E+02	0.400E+01	0.195E+03	0.191E+08	0.604E+00	0.115E+08
-0.180E+02	0.363E+01	0.135E+03	0.136E+08	0.510E+00	0.691E+07
-0.160E+02	0.350E+01	0.115E+03	0.118E+08	0.466E+00	0.551E+07
-0.140E+02	0.338E+01	0.975E+02	0.102E+08	0.425E+00	0.432E+07
-0.100E+02	0.325E+01	0.700E+02	0.858E+07	0.329E+00	0.282E+07
-0.800E+01	0.313E+01	0.575E+02	0.704E+07	0.292E+00	0.206E+07
-0.600E+01	0.300E+01	0.500E+02	0.556E+07	0.276E+00	0.153E+07
0.000E+00	0.290E+01	0.325E+02	0.442E+07	0.192E+00	0.847E+06
0.800E+01	0.280E+01	0.175E+02	0.331E+07	0.111E+00	0.367E+06
0.120E+02	0.275E+01	0.125E+02	0.278E+07	0.820E-01	0.228E+06
0.180E+02	0.270E+01	0.750E+01	0.225E+07	0.510E-01	0.115E+06
0.220E+02	0.260E+01	0.600E+01	0.123E+07	0.440E-01	0.540E+05

10/29/82
RUN715

PMMA. ±394 GRAPHITE (67/33 %BY VOLUME)

(L/T RATIO = 5.163)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010480 THICK=0.001230 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.435E+02	0.770E+03	0.445E+10	0.101E+00	0.449E+09
0.400E+02	0.421E+02	0.868E+03	0.417E+10	0.121E+00	0.505E+09
0.600E+02	0.405E+02	0.808E+03	0.385E+10	0.122E+00	0.470E+09
0.800E+02	0.386E+02	0.755E+03	0.350E+10	0.125E+00	0.439E+09
0.960E+02	0.364E+02	0.808E+03	0.310E+10	0.151E+00	0.470E+09
0.104E+03	0.338E+02	0.935E+03	0.267E+10	0.204E+00	0.544E+09
0.108E+03	0.310E+02	0.106E+04	0.225E+10	0.273E+00	0.614E+09
0.110E+03	0.288E+02	0.106E+04	0.193E+10	0.318E+00	0.615E+09
0.112E+03	0.263E+02	0.103E+04	0.167E+10	0.355E+00	0.594E+09
0.114E+03	0.250E+02	0.102E+04	0.146E+10	0.403E+00	0.587E+09
0.116E+03	0.233E+02	0.102E+04	0.126E+10	0.466E+00	0.587E+09
0.118E+03	0.214E+02	0.101E+04	0.106E+10	0.545E+00	0.580E+09
0.120E+03	0.195E+02	0.980E+03	0.882E+09	0.639E+00	0.564E+09
0.122E+03	0.175E+02	0.930E+03	0.707E+09	0.753E+00	0.533E+09
0.124E+03	0.158E+02	0.850E+03	0.570E+09	0.850E+00	0.485E+09
0.126E+03	0.139E+02	0.745E+03	0.439E+09	0.960E+00	0.422E+09
0.128E+03	0.121E+02	0.625E+03	0.332E+09	0.105E+01	0.350E+09
0.130E+03	0.105E+02	0.498E+03	0.245E+09	0.112E+01	0.275E+09
0.132E+03	0.913E+01	0.385E+03	0.182E+09	0.115E+01	0.208E+09
0.134E+03	0.800E+01	0.290E+03	0.136E+09	0.112E+01	0.153E+09
0.136E+03	0.738E+01	0.218E+03	0.114E+09	0.992E+00	0.113E+09
0.138E+03	0.675E+01	0.165E+03	0.930E+08	0.898E+00	0.835E+08
0.140E+03	0.613E+01	0.130E+03	0.740E+08	0.859E+00	0.636E+08
0.142E+03	0.575E+01	0.100E+03	0.635E+08	0.750E+00	0.476E+08
0.144E+03	0.538E+01	0.800E+02	0.537E+08	0.687E+00	0.368E+08
0.146E+03	0.513E+01	0.650E+02	0.475E+08	0.614E+00	0.291E+08
0.148E+03	0.488E+01	0.525E+02	0.416E+08	0.548E+00	0.228E+08
0.152E+03	0.450E+01	0.375E+02	0.333E+08	0.459E+00	0.153E+08
0.154E+03	0.425E+01	0.300E+02	0.281E+08	0.412E+00	0.116E+08
0.160E+03	0.400E+01	0.200E+02	0.233E+08	0.310E+00	0.721E+07
0.164E-03	0.375E+01	0.150E+02	0.187E+08	0.265E+00	0.495E+07
0.166E+03	0.363E+01	0.125E+02	0.165E+08	0.236E+00	0.390E+07
0.170E+03	0.350E+01	0.100E+02	0.144E+08	0.202E+00	0.292E+07
0.174E+03	0.338E+01	0.750E+01	0.124E+08	0.163E+00	0.203E+07
0.178E+03	0.325E+01	0.750E+01	0.105E+08	0.176E+00	0.184E+07
0.182E+03	0.313E+01	0.750E+01	0.858E+07	0.190E+00	0.163E+07
0.186E+03	0.300E+01	0.500E+01	0.677E+07	0.138E+00	0.933E+06
0.190E+03	0.288E+01	0.500E+01	0.504E+07	0.150E+00	0.757E+06
0.192E-03	0.275E+01	0.250E+01	0.339E+07	0.820E-01	0.278E+06
0.196E+03	0.263E+01	0.250E+01	0.180E+07	0.900E-01	0.162E+06

10/29/82
RUN716

PMMA/6894 GRAPHITE (67/33 %BY VOLUME)

(L/T RATIO = 5.248)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010410 THICK=0.001210 OSC AMP=0.20

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.405E+02	0.145E+04	0.407E+10	0.110E+00	0.447E+09
0.400E+02	0.393E+02	0.153E+04	0.382E+10	0.123E+00	0.469E+09
0.600E+02	0.375E+02	0.158E+04	0.349E+10	0.139E+00	0.485E+09
0.800E+02	0.359E+02	0.160E+04	0.319E+10	0.154E+00	0.491E+09
0.940E+02	0.339E+02	0.170E+04	0.284E+10	0.184E+00	0.523E+09
0.102E+03	0.319E+02	0.191E+04	0.252E+10	0.233E+00	0.587E+09
0.106E+03	0.294E+02	0.190E+04	0.214E+10	0.273E+00	0.584E+09
0.108E+03	0.278E+02	0.179E+04	0.190E+10	0.288E+00	0.549E+09
0.110E+03	0.260E+02	0.171E+04	0.167E+10	0.314E+00	0.524E+09
0.112E+03	0.240E+02	0.163E+04	0.142E+10	0.351E+00	0.499E+09
0.114E+03	0.224E+02	0.158E+04	0.123E+10	0.391E+00	0.482E+09
0.116E+03	0.206E+02	0.154E+04	0.105E+10	0.450E+00	0.470E+09
0.118E+03	0.190E+02	0.152E+04	0.885E+09	0.521E+00	0.461E+09
0.120E+03	0.173E+02	0.147E+04	0.726E+09	0.610E+00	0.443E+09
0.122E+03	0.158E+02	0.140E+04	0.603E+09	0.697E+00	0.420E+09
0.124E+03	0.140E+02	0.128E+04	0.473E+09	0.811E+00	0.384E+09
0.126E+03	0.125E+02	0.114E+04	0.374E+09	0.907E+00	0.339E+09
0.128E+03	0.110E+02	0.973E+03	0.286E+09	0.997E+00	0.285E+09
0.130E+03	0.963E+01	0.800E+03	0.216E+09	0.107E+01	0.231E+09
0.132E+03	0.863E+01	0.640E+03	0.170E+09	0.107E+01	0.182E+09
0.134E+03	0.788E+01	0.503E+03	0.139E+09	0.100E+01	0.140E+09
0.136E+03	0.725E+01	0.398E+03	0.116E+09	0.938E+00	0.109E+09
0.138E+03	0.675E+01	0.313E+03	0.983E+08	0.850E+00	0.836E+08
0.140E+03	0.625E+01	0.245E+03	0.821E+08	0.778E+00	0.638E+08
0.142E+03	0.588E+01	0.193E+03	0.708E+08	0 692E+00	0.489E+08
0.144E+03	0.538E+01	0.155E+03	0.567E+08	0.665E+00	0.377E+08
0.146E+03	0.513E+01	0.123E+03	0.502E+08	0.578E+00	0.290E+08
0.148E+03	0.488E+01	0.100E+03	0.440E+08	0 522E+00	0.229E+08
0.150E-03	0.463E+01	0.825E+02	0.380E+08	0.479E+00	0.182E+08
0.154E+03	0.438E+01	0.575E+02	0.324E+08	0.372E+00	0.121E+08
0.158E+03	0.413E+01	0.400E+02	0.271E+08	0.291E+00	0.791E+07
0.160E+03	0.390E+01	0.350E+02	0.226E+08	0.285E+00	0.646E+07
0.166E+03	0.375E+01	0.250E+02	0.198E+08	0.220E+00	0.436E+07
0.168E+03	0.363E+01	0.225E+02	0.175E+08	0.212E+00	0.371E+07
0.172E+03	0.350E+01	0.175E+02	0.153E+08	0.177E+00	0.270E+07
0.178E+03	0.339E+01	0.150E+02	0.131E+08	0.163E+00	0.214E+07
0.182E+03	0.325E+01	0.125E+02	0.111E+08	0.147E+00	0.162E+07
0.186E+03	0.313E+01	0.100E+02	0.907E+07	0.127E+00	0.115E+07
0.190E+03	0.300E+01	0.750E+01	0.716E+07	0.103E+00	0.740E+06
0.194E+03	0.288E+01	0.750E+01	0.533E+07	0.113E+00	0.600E+06
0.198E+03	0.275E+01	0.500E+01	0.358E+07	0.820E-01	0.294E+06
0.200E+03	0.263E+01	0.500E+01	0.191E+07	0 900E-01	0.172E+06
0.204E+03	0.260E+01	0 250E+01	0.158E+07	0.459E-01	0.725E+05
0.206E+03	0 258E+01	0.250E+01	0.132E+07	0.466E-01	0 616E+05
0.210E+03	0 255E+01	0.250E+01	0.939E+06	0.477E-01	0 448E+05
0.214E-03	0.252E+01	0.250E+01	0.560E+06	0.488E-01	0.273E+05
0.218E+03	0.250E+01	0.250E+01	0.310E+06	0.496E-01	0.154E+05

11/2/82
RUN717

PMMA/6894 GRAPHITE (67/33 %BY VOLUME)

(L/T RATIO = 5.205)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010670 THICK=0.001220 OSC AMP=0.30

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.401E+02	0.228E+04	0.381E+10	0.117E+00	0.446E+09
0.400E+02	0.391E+02	0.237E+04	0.362E+10	0.128E+00	0.462E+09
0.600E+02	0.374E+02	0.247E+04	0.330E+10	0.146E+00	0.482E+09
0.800E+02	0.353E+02	0.253E+04	0.293E+10	0.168E+00	0.494E+09
0.940E+02	0.334E+02	0.266E+04	0.263E+10	0.198E+00	0.519E+09
0.102E+03	0.316E+02	0.291E+04	0.236E+10	0.240E+00	0.567E+09
0.106E+03	0.296E+02	0.289E+04	0.206E+10	0.273E+00	0.563E+09
0.112E+03	0.271E+02	0.273E+04	0.173E+10	0.306E+00	0.530E+09
0.114E+03	0.244E+02	0.255E+04	0.140E+10	0.355E+00	0.495E+09
0.116E+03	0.211E+02	0.229E+04	0.104E+10	0.423E+00	0.442E+09
0.118E+03	0.184E+02	0.209E+04	0.787E+09	0.512E+00	0.402E+09
0.120E+03	0.160E+02	0.196E+04	0.593E+09	0.631E+00	0.374E+09
0.122E+03	0.140E+02	0.180E+04	0.450E+09	0.758E+00	0.341E+09
0.124E+03	0.119E+02	0.158E+04	0.320E+09	0.926E+00	0.296E+09
0.126E+03	0.986E+01	0.132E+04	0.217E+09	0.112E+01	0.242E+09
0.128E+03	0.850E+01	0.106E+04	0.157E+09	0.121E+01	0.190E+09
0.130E+03	0.725E+01	0.808E+03	0.110E+09	0.127E+01	0.140E+09
0.132E+03	0.638E+01	0.600E+03	0.819E+08	0.122E+01	0.999E+08
0.134E+03	0.588E+01	0.453E+03	0.674E+08	0.108E+01	0.730E+08
0.136E+03	0.563E+01	0.398E+03	0.605E+08	0.104E+01	0.629E+08
0.138E+03	0.538E+01	0.315E+03	0.540E+08	0.901E+00	0.487E+08
0.140E+03	0.513E+01	0.263E+03	0.478E+08	0.826E+00	0.395E+08
0.142E+03	0.475E+01	0.223E+03	0.390E+08	0.815E+00	0.318E+08
0.146E+03	0.450E+01	0.120E+03	0.335E+08	0.490E+00	0.164E+08
0.150E+03	0.425E+01	0.825E+02	0.283E+08	0.378E+00	0.107E+08
0.152E+03	0.400E+01	0.700E+02	0.234E+08	0.362E+00	0.847E+07
0.158E+03	0.375E+01	0.450E+02	0.188E+08	0.265E+00	0.498E+07
0.162E+03	0.363E+01	0.375E+02	0.166E+08	0.236E+00	0.393E+07
0.166E+03	0.350E+01	0.300E+02	0.145E+08	0.202E+00	0.294E+07
0.170E+03	0.338E+01	0.250E+02	0.125E+08	0.181E+00	0.227E+07

P1700/6894 (67/33) BY VOLUME

(L/T RATIO = 7.560)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010410 THICK=0.000840 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.264E+02	0.808E+02	0.514E+10	0.575E-01	0.296E+09
0.170E+03	0.261E+02	0.865E+02	0.502E+10	0.631E-01	0.317E+09
0.190E+03	0.242E+02	0.105E+03	0.431E+10	0.890E-01	0.384E+09
0.194E+03	0.218E+02	0.167E+03	0.349E+10	0.175E+00	0.610E+09
0.196E+03	0.197E+02	0.219E+03	0.285E+10	0.280E+00	0.796E+09
0.198E+03	0.168E+02	0.269E+03	0.205E+10	0.475E+00	0.972E+09
0.200E+03	0.123E+02	0.270E+03	0.109E+10	0.878E+00	0.956E+09
0.202E+03	0.760E+01	0.167E+03	0.385E+09	0.144E+01	0.552E+09
0.204E+03	0.518E+01	0.703E+02	0.154E+09	0.130E+01	0.200E+09
0.206E+03	0.407E+01	0.278E+02	0.781E+08	0.829E+00	0.647E+08
0.208E+03	0.346E+01	0.105E+02	0.437E+08	0.434E+00	0.190E+08
0.210E+03	0.306E+01	0.325E+01	0.243E+08	0.172E+00	0.417E+07
0.212E+03	0.299E+01	0.250E+00	0.208E+08	0.139E-01	0.290E+06
0.214E+03	0.288E+01	0.750E+00	0.159E+08	0.450E-01	0.717E+06
0.216E+03	0.278E+01	0.750E+00	0.117E+08	0.483E-01	0.567E+06

P1700&6894 (67/33-VOL) DRIED 24HRS

(L/T RATIO = 5.991)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010160 THICK=0.001060 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.380E+02	0.923E+02	0.548E+10	0.316E-01	0.173E+09
0.170E+03	0.377E+02	0.110E+03	0.538E+10	0.382E-01	0.205E+09
0.184E+03	0.352E+02	0.213E+03	0.469E+10	0.852E-01	0.400E+09
0.188E+03	0.314E+02	0.384E+03	0.371E+10	0.194E+00	0.718E+09
0.190E+03	0.278E+02	0.514E+03	0.290E+10	0.331E+00	0.960E+09
0.192E+03	0.236E+02	0.569E+03	0.210E+10	0.506E+00	0.106E+10
0.194E+03	0.176E+02	0.575E+03	0.115E+10	0.922E+00	0.106E+10
0.196E+03	0.111E+02	0.382E+03	0.441E+09	0.155E+01	0.683E+09
0.198E+03	0.739E+01	0.167E+03	0.184E+09	0.152E+01	0.279E+09
0.200E+03	0.593E+01	0.718E+02	0.110E+09	0.101E+01	0.112E+09
0.202E+03	0.521E+01	0.340E+02	0.800E+08	0.621E+00	0.496E+08
0.204E+03	0.481E+01	0.183E+02	0.647E+08	0.391E+00	0.253E+08
0.206E+03	0.451E+01	0.113E+02	0.541E+08	0.274E+00	0.148E+08
0.208E+03	0.431E+01	0.825E+01	0.474E+08	0.220E+00	0.104E+08
0.210E+03	0.411E+01	0.675E+01	0.410E+08	0.198E+00	0.811E+07
0.212E+03	0.391E+01	0.550E+01	0.349E+08	0.178E+00	0.621E+07
0.214E+03	0.369E+01	0.475E+01	0.284E+08	0.173E+00	0.492E+07
0.216E+03	0.349E+01	0.400E+01	0.229E+08	0.163E+00	0.374E+07
0.218E+03	0.336E+01	0.325E+01	0.197E+08	0.143E+00	0.280E+07
0.220E+03	0.317E+01	0.200E+01	0.150E+08	0.984E-01	0.148E+07

11/2/82
RUN379

(L/T RATIO = 5.773)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009650 THICK=0.001100 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.389E+02	0.810E+02	0.540E+10	0.265E-01	0.143E+09
0.170E+03	0.389E+02	0.928E+02	0.540E+10	0.303E-01	0.164E+09
0.186E+03	0.363E+02	0.224E+03	0.468E+10	0.844E-01	0.395E+09
0.190E+03	0.322E+02	0.430E+03	0.368E+10	0.206E+00	0.759E+09
0.192E+03	0.278E+02	0.597E+03	0.274E+10	0.384E+00	0.105E+10
0.194E+03	0.231E+02	0.650E+03	0.188E+10	0.606E+00	0.114E+10
0.196E+03	0.161E+02	0.591E+03	0.912E+09	0.112E+01	0.102E+10
0.198E+03	0.104E+02	0.333E+03	0.367E+09	0.152E+01	0.558E+09
0.200E+03	0.764E+01	0.149E+03	0.187E+09	0.126E+01	0.236E+09
0.202E+03	0.641E+01	0.705E+02	0.125E+09	0.850E+00	0.106E+09
0.204E+03	0.574E+01	0.368E+02	0.959E+08	0.554E+00	0.531E+08
0.206E+03	0.544E+01	0.218E+02	0.839E+08	0.365E+00	0.306E+08
0.208E+03	0.513E+01	0.155E+02	0.721E+08	0.293E+00	0.211E+08
0.210E+03	0.491E+01	0.123E+02	0.644E+08	0.252E+00	0.162E+08
0.212E+03	0.464E+01	0.105E+02	0.550E+08	0.242E+00	0.133E+08
0.214E+03	0.443E+01	0.950E+01	0.482E+08	0.241E+00	0.116E+08
0.216E+03	0.422E+01	0.825E+01	0.420E+08	0.229E+00	0.962E+07
0.218E+03	0.403E+01	0.725E+01	0.361E+08	0.222E+00	0.800E+07
0.220E+03	0.384E+01	0.650E+01	0.308E+08	0.219E+00	0.674E+07

11/2/82
RUN383

P1700&6894 (67/33-VOL) DRIED 24HRS

(L/T RATIO = 5.670)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.009906 THICK=0.001120 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.414E+02	0.923E+02	0.564E+10	0.267E-01	0.151E+09
0.170E+03	0.408E+02	0.108E+03	0.548E+10	0.320E-01	0.175E+09
0.188E+03	0.383E+02	0.180E+03	0.484E+10	0.606E-01	0.293E+09
0.192E+03	0.357E+02	0.277E+03	0.420E+10	0.107E+00	0.451E+09
0.194E+03	0.336E+02	0.360E+03	0.371E+10	0.158E+00	0.586E+09
0.196E+03	0.308E+02	0.478E+03	0.311E+10	0.250E+00	0.778E+09
0.198E+03	0.261E+02	0.608E+03	0.222E+10	0.444E+00	0.987E+09
0.200E+03	0.205E+02	0.635E+03	0.136E+10	0.751E+00	0.102E+10
0.202E+03	0.134E+02	0.496E+03	0.568E+09	0.138E+01	0.784E+09
0.204E+03	0.857E+01	0.235E+03	0.223E+09	0.159E+01	0.353E+09
0.206E+03	0.661E+01	0.101E+03	0.124E+09	0.115E+01	0.142E+09
0.208E+03	0.570E+01	0.475E+02	0.871E+08	0.725E+00	0.631E+08
0.210E+03	0.521E+01	0.263E+02	0.695E+08	0.479E+00	0.333E+08
0.212E+03	0.490E+01	0.165E+02	0.591E+08	0.341E+00	0.201E+08
0.214E+03	0.463E+01	0.125E+02	0.504E+08	0.290E+00	0.146E+08
0.216E+03	0.441E+01	0.105E+02	0.441E+08	0.268E+00	0.118E+08
0.218E+03	0.410E+01	0.900E+01	0.353E+08	0.266E+00	0.937E+07
0.220E+03	0.391E+01	0.775E+01	0.303E+08	0.251E+00	0.761E+07

11/2/82
RUN382

P1700 + 6894 (67/33) BY VOLUME DRIED

(L/T RATIO = 5.773)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009910 THICK=0.001100 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.434E+02	0.110E+03	0.655E+10	0.289E-01	0.189E+09
0.170E+03	0.423E+02	0.134E+03	0.623E+10	0.371E-01	0.231E+09
0.184E+03	0.401E+02	0.187E+03	0.559E+10	0.575E-01	0.322E+09
0.190E+03	0.362E+02	0.325E+03	0.455E+10	0.123E+00	0.559E+09
0.192E+03	0.335E+02	0.423E+03	0.390E+10	0.186E+00	0.726E+09
0.194E+03	0.297E+02	0.554E+03	0.304E+10	0.312E+00	0.951E+09
0.196E+03	0.241E+02	0.643E+03	0.200E+10	0.550E+00	0.110E+10
0.198E+03	0.172E+02	0.604E+03	0.101E+10	0.101E+01	0.102E+10
0.200E+03	0.109E+02	0.364E+03	0.389E+09	0.153E+01	0.596E+09
0.202E+03	0.759E+01	0.157E+03	0.179E+09	0.135E+01	0.243E+09
0.204E+03	0.628E+01	0.703E+02	0.116E+09	0.885E+00	0.103E+09
0.206E+03	0.555E+01	0.353E+02	0.860E+08	0.568E+00	0.488E+08
0.208E+03	0.516E+01	0.208E+02	0.715E+08	0.386E+00	0.276E+08
0.210E+03	0.488E+01	0.145E+02	0.615E+08	0.303E+00	0.186E+08
0.212E+03	0.459E+01	0.118E+02	0.520E+08	0.277E+00	0.144E+08
0.214E+03	0.438E+01	0.100E+02	0.454E+08	0.259E+00	0.118E+08
0.216E+03	0.409E+01	0.875E+01	0.369E+08	0.260E+00	0.958E+07
0.218E+03	0.386E+01	0.725E+01	0.306E+08	0.241E+00	0.738E+07
0.220E+03	0.366E+01	0.575E+01	0.254E+08	0.213E+00	0.540E+07

11/2/82
RUN393

P1700 RHEO MIXED 20 MIN.

(L/T RATIO = 5.427)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010160 THICK=0.001170 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.226E+02	0.138E+02	0.142E+10	0.134E-01	0.190E+08
0.170E+03	0.220E+02	0.158E+02	0.135E+10	0.161E-01	0.218E+08
0.180E+03	0.209E+02	0.278E+02	0.121E+10	0.317E-01	0.383E+08
0.186E+03	0.193E+02	0.590E+02	0.104E+10	0.784E-01	0.813E+08
0.190E+03	0.169E+02	0.118E+03	0.789E+09	0.204E+00	0.161E+09
0.192E+03	0.150E+02	0.149E+03	0.615E+09	0.331E+00	0.203E+09
0.194E+03	0.121E+02	0.170E+03	0.399E+09	0.572E+00	0.228E+09
0.196E+03	0.831E+01	0.149E+03	0.178E+09	0.107E+01	0.191E+09
0.198E+03	0.504E+01	0.798E+02	0.544E+08	0.156E+01	0.848E+08
0.200E+03	0.335E+01	0.293E+02	0.144E+08	0.129E+01	0.186E+08
0.202E+03	0.264E+01	0.325E+01	0.234E+07	0.232E+00	0.542E+06

10/29/82
RUN407

P1700 W/3%SAF/WT,33%6894/VOL,2 MIN

(L/T RATIO = 7.840)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010160 THICK=0.000810 OSC AMP=0 10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.270E+02	0.189E+03	0.614E+10	0.643E-01	0.395E+09
0.170E+03	0.266E+02	0.218E+03	0.597E+10	0.762E-01	0.455E+09
0.188E+03	0.251E+02	0.259E+03	0.532E+10	0.102E+00	0.541E+09
0.192E+03	0.233E+02	0.327E+03	0.457E+10	0.149E+00	0.681E+09
0.194E+03	0.219E+02	0.392E+03	0.404E+10	0.202E+00	0.816E+09
0.196E+03	0.198E+02	0.470E+03	0.329E+10	0.297E+00	0.976E+09
0.198E+03	0.170E+02	0.537E+03	0.240E+10	0.461E+00	0.111E+10
0.200E+03	0.129E+02	0.523E+03	0.138E+10	0.773E+00	0.106E+10
0.202E+03	0.854E+01	0.350E+03	0.568E+09	0.119E+01	0.676E+09
0.204E+03	0.588E+01	0.160E+03	0.242E+09	0.115E+01	0.277E+09
0.206E+03	0.469E+01	0.685E+02	0.135E+09	0.773E+00	0.104E+09
0.208E+03	0.401E+01	0.318E+02	0.849E+08	0.489E+00	0.415E+08
0.210E+03	0.366E+01	0.160E+02	0.620E+08	0.296E+00	0.183E+08
0.212E+03	0.345E+01	0.875E+01	0.492E+08	0.182E+00	0.897E+07
0.214E+03	0.326E+01	0.475E+01	0.385E+08	0.111E+00	0.426E+07
0.216E+03	0.316E+01	0.300E+01	0.330E+08	0.744E-01	0.245E+07
0.218E+03	0.304E+01	0.175E+01	0.264E+08	0.471E-01	0.124E+07
0.220E+03	0.288E+01	0.750E+00	0.182E+08	0.225E-01	0.410E+06

10/29/82
RUN406

P170C W/3%SAF/WT.33%6894/VOL 5 MIN

(L/T RATIO = 8.247)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010628 THICK=0.000770 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.278E+02	0.223E+03	0.722E+10	0.717E-01	0.517E+09
0.170E+03	0.274E+02	0.230E+03	0.701E+10	0.761E-01	0.533E+09
0.188E+03	0.260E+02	0.285E+03	0.630E+10	0.105E+00	0.660E+09
0.192E+03	0.244E+02	0.339E+03	0.556E+10	0.141E+00	0.783E+09
0.194E+03	0.231E+02	0.401E+03	0.497E+10	0.186E+00	0.925E+09
0.196E+03	0.212E+02	0.483E+03	0.419E+10	0.266E+00	0.111E+10
0.198E+03	0.185E+02	0.563E+03	0.317E+10	0.408E+00	0.129E+10
0.200E+03	0.149E+02	0.582E+03	0.199E+10	0.663E+00	0.132E+10
0.202E+03	0.102E+02	0.445E+03	0.930E+09	0.105E+01	0.978E+09
0.204E+03	0.679E+01	0.223E+03	0.376E+09	0.120E+01	0.451E+09
0.206E+03	0.518E+01	0.978E+02	0.195E+09	0.905E+00	0.176E+09
0.208E+03	0.439E+01	0.458E+02	0.124E+09	0.589E+00	0.729E+08
0.210E+03	0.395E+01	0.235E+02	0.893E+08	0.373E+00	0.333E+08
0.212E+03	0.366E+01	0.138E+02	0.686E+08	0.254E+00	0.174E+08
0.214E+03	0.346E+01	0.875E+01	0.553E+08	0.181E+00	0.100E+08
0.216E+03	0.336E+01	0.650E+01	0.488E+08	0.143E+00	0.696E+07
0.218E+03	0.316E+01	0.475E+01	0.365E+08	0.118E+00	0.430E+07
0.220E+03	0.306E+01	0.300E+01	0.307E+08	0.793E-01	0.243E+07

10/29/82
RUN405

P1700 W/3%SAT/WT, 33%6894/VOL, 15 MIN

(L/T RATIO = 7.744)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.009906 THICK=0.000820 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.341E+02	0.232E+03	0.972E+10	0.494E-01	0.481E+09
0.170E+03	0.334E+02	0.276E+03	0.934E+10	0.614E-01	0.573E+09
0.186E+03	0.312E+02	0.398E+03	0.813E+10	0.101E+00	0.824E+09
0.190E+03	0.282E+02	0.525E+03	0.664E+10	0.164E+00	0.109E+10
0.192E+03	0.264E+02	0.526E+03	0.583E+10	0.187E+00	0.109E+10
0.194E+03	0.240E+02	0.588E+03	0.481E+10	0.252E+00	0.121E+10
0.196E+03	0.207E+02	0.661E+03	0.356E+10	0.382E+00	0.136E+10
0.198E+03	0.162E+02	0.673E+03	0.215E+10	0.638E+00	0.137E+10
0.200E+03	0.110E+02	0.513E+03	0.974E+09	0.104E+01	0.102E+10
0.202E+03	0.707E+01	0.258E+03	0.370E+09	0.128E+01	0.472E+09
0.204E+03	0.525E+01	0.110E+03	0.180E+09	0.992E+00	0.179E+09
0.206E+03	0.435E+01	0.505E+02	0.108E+09	0.662E+00	0.713E+08
0.208E+03	0.381E+01	0.263E+02	0.708E+08	0.448E+00	0.317E+08
0.210E+03	0.351E+01	0.153E+02	0.523E+08	0.306E+00	0.160E+08
0.212E+03	0.330E+01	0.100E+02	0.401E+08	0.228E+00	0.913E+07
0.214E+03	0.311E+01	0.725E+01	0.300E+08	0.186E+00	0.556E+07
0.216E+03	0.301E+01	0.500E+01	0.248E+08	0.137E+00	0.339E+07
0.218E+03	0.281E+01	0.350E+01	0.150E+08	0.110E+00	0.165E+07
0.220E+03	0.270E+01	0.175E+01	0.980E+07	0.595E-01	0.583E+06

10/29/82
RUN402

P1700 RHEO MIXED 15 MIN

(L/T RATIO = 9.203)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010920 THICK=0.000690 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.139E+02	0.950E+01	0.238E+10	0.123E-01	0.292E+08
0.170E+03	0.135E+02	0.125E+02	0.225E+10	0.171E-01	0.384E+08
0.184E+03	0.126E+02	0.260E+02	0.195E+10	0.408E-01	0.794E+08
0.188E+03	0.117E+02	0.483E+02	0.167E+10	0.878E-01	0.146E+09
0.190E+03	0.107E+02	0.705E+02	0.139E+10	0.153E+00	0.212E+09
0.192E+03	0.916E+01	0.940E+02	0.997E+09	0.278E+00	0.277E+09
0.194E+03	0.765E+01	0.111E+03	0.671E+09	0.469E+00	0.315E+09
0.196E+03	0.551E+01	0.100E+03	0.311E+09	0.818E+00	0.254E+09
0.198E+03	0.359E+01	0.540E+02	0.865E+08	0.104E+01	0.899E+08
0.200E+03	0.275E+01	0.148E+02	0.184E+08	0.484E+00	0.890E+07
0.202E+03	0.260E+01	0.250E+00	0.813E+07	0.917E-02	0.745E+05

10/29/82
RUN403

P1700 W/3%SAF BY WEIGHT, MIX 15 MIN

(L/T RATIO = 7.840)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010688 THICK=0.000810 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.150E+03	0.177E+02	0.160E+02	0.248E+10	0.127E-01	0.315E+08
0.164E+03	0.168E+02	0.198E+02	0.223E+10	0.174E-01	0.388E+08
0.172E+03	0.157E+02	0.233E+02	0.194E+10	0.235E-01	0.455E+08
0.176E+03	0.147E+02	0.245E+02	0.170E+10	0.281E-01	0.478E+08
0.180E+03	0.138E+02	0.263E+02	0.149E+10	0.343E-01	0.510E+08
0.184E+03	0.129E+02	0.310E+02	0.129E+10	0.463E-01	0.599E+08
0.188E+03	0.118E+02	0.450E+02	0.107E+10	0.803E-01	0.863E+08
0.190E+03	0.110E+02	0.603E+02	0.927E+09	0.124E+00	0.115E+09
0.192E+03	0.986E+01	0.745E+02	0.738E+09	0.190E+00	0.140E+09
0.194E+03	0.860E+01	0.868E+02	0.549E+09	0.291E+00	0.160E+09
0.196E+03	0.722E+01	0.950E+02	0.373E+09	0.451E+00	0.168E+09
0.198E+03	0.555E+01	0.890E+02	0.200E+09	0.717E+00	0.143E+09
0.200E+03	0.383E+01	0.553E+02	0.688E+08	0.936E+00	0.645E+08
0.202E+03	0.271E+01	0.200E+02	0.999E+07	0.674E+00	0.673E+07

10/29/82
RUN707

TORLON 4000T/6894 GRAPHITE (50/50 %BY VOLUME)

(L/T RATIO = 5.773)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010950 THICK=0.001100 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.327E+02	0.347E+03	0.336E+10	0.805E-01	0.270E+09
0.400E+02	0.323E+02	0.346E+03	0.327E+10	0.822E-01	0.269E+09
0.600E+02	0.318E+02	0.349E+03	0.318E+10	0.854E-01	0.271E+09
0.800E+02	0.313E+02	0.351E+03	0.308E+10	0.887E-01	0.273E+09
0.100E+03	0.310E+02	0.352E+03	0.301E+10	0.908E-01	0.273E+09
0.120E+03	0.302E+02	0.344E+03	0.286E+10	0.934E-01	0.267E+09
0.140E+03	0.297E+02	0.331E+03	0.276E+10	0.932E-01	0.257E+09
0.160E+03	0.292E+02	0.316E+03	0.267E+10	0.920E-01	0.245E+09
0.180E+03	0.286E+02	0.307E+03	0.256E+10	0.930E-01	0.238E+09
0.200E+03	0.283E+02	0.312E+03	0.250E+10	0.968E-01	0.242E+09
0.220E+03	0.282E+02	0.378E+03	0.249E+10	0.118E+00	0.293E+09
0.240E+03	0.280E+02	0.488E+03	0.245E+10	0.154E+00	0.379E+09
0.256E+03	0.259E+02	0.642E+03	0.210E+10	0.237E+00	0.498E+09
0.260E+03	0.236E+02	0.686E+03	0.173E+10	0.307E+00	0.531E+09
0.262E+03	0.218E+02	0.687E+03	0.148E+10	0.358E+00	0.530E+09
0.264E+03	0.200E+02	0.663E+03	0.125E+10	0.409E+00	0.511E+09
0.266E+03	0.183E+02	0.630E+03	0.104E+10	0.466E+00	0.484E+09
0.268E+03	0.165E+02	0.587E+03	0.839E+09	0.534E+00	0.448E+09
0.270E+03	0.150E+02	0.540E+03	0.687E+09	0.598E+00	0.411E+09
0.272E+03	0.134E+02	0.490E+03	0.546E+09	0.678E+00	0.370E+09
0.274E+03	0.119E+02	0.428E+03	0.416E+09	0.769E+00	0.320E+09
0.276E+03	0.102E+02	0.353E+03	0.310E+09	0.840E+00	0.260E+09
0.278E+03	0.864E+01	0.277E+03	0.216E+09	0.921E+00	0.199E+09
0.280E+03	0.736E+01	0.210E+03	0.152E+09	0.958E+00	0.145E+09
0.282E+03	0.636E+01	0.153E+03	0.108E+09	0.936E+00	0.101E+09
0.284E+03	0.557E+01	0.112E+03	0.787E+08	0.890E+00	0.700E+08
0.286E+03	0.497E+01	0.813E+02	0.587E+08	0.814E+00	0.478E+08
0.288E+03	0.449E+01	0.595E+02	0.442E+08	0.733E+00	0.324E+08
0.290E+03	0.401E+01	0.428E+02	0.314E+08	0.659E+00	0.207E+08
0.292E+03	0.366E+01	0.303E+02	0.230E+08	0.559E+00	0.129E+08
0.294E+03	0.336E+01	0.220E+02	0.163E+08	0.483E+00	0.788E+07
0.296E+03	0.316E+01	0.168E+02	0.122E+08	0.415E+00	0.507E+07
0.298E+03	0.300E+01	0.125E+02	0.907E+07	0.344E+00	0.312E+07
0.300E+03	0.286E+01	0.875E+01	0.651E+07	0.265E+00	0.173E+07
0.302E+03	0.275E+01	0.625E+01	0.497E+07	0.201E+00	0.100E+07
0.304E+03	0.266E+01	0.400E+01	0.303E+07	0.140E+00	0.424E+06
0.306E+03	0.256E+01	0.225E+01	0.140E+07	0.849E-01	0.119E+06
0.308E+03	0.254E+01	0.125E+01	0.980E+06	0.482E-01	0.472E+05

10/29/82
RUN712

TORLON 4000T/6894 GRAPHITE (50/50 %BY VOLUME)

(L/T RATIO = 4.847)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010480 THICK=0.001310 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.436E+02	0.603E+03	0.370E+10	0.785E-01	0.291E+09
0.400E+02	0.433E+02	0.610E+03	0.364E+10	0.809E-01	0.294E+09
0.600E+02	0.430E+02	0.610E+03	0.360E+10	0.818E-01	0.294E+09
0.800E+02	0.426E+02	0.603E+03	0.353E+10	0.822E-01	0.291E+09
0.100E+03	0.424E+02	0.585E+03	0.349E+10	0.808E-01	0.282E+09
0.120E+03	0.423E+02	0.568E+03	0.347E+10	0.788E-01	0.274E+09
0.140E+03	0.420E+02	0.558E+03	0.343E+10	0.784E-01	0.269E+09
0.160E+03	0.419E+02	0.545E+03	0.341E+10	0.771E-01	0.263E+09
0.180E+03	0.415E+02	0.533E+03	0.335E+10	0.767E-01	0.257E+09
0.200E+03	0.414E+02	0.530E+03	0.333E+10	0.768E-01	0.256E+09
0.220E+03	0.413E+02	0.540E+03	0.331E+10	0.787E-01	0.260E+09
0.240E+03	0.413E+02	0.575E+03	0.331E+10	0.838E-01	0.277E+09
0.260E+03	0.396E+02	0.855E+03	0.305E+10	0.135E+00	0.412E+09
0.264E+03	0.373E+02	0.106E+04	0.270E+10	0.189E+00	0.508E+09
0.268E+03	0.330E+02	0.126E+04	0.211E+10	0.286E+00	0.604E+09
0.270E+03	0.304E+02	0.139E+04	0.179E+10	0.372E+00	0.666E+09
0.272E+03	0.274E+02	0.140E+04	0.145E+10	0.462E+00	0.671E+09
0.274E+03	0.248E+02	0.140E+04	0.118E+10	0.567E+00	0.671E+09
0.276E+03	0.219E+02	0.136E+04	0.922E+09	0.706E+00	0.651E+09
0.278E+03	0.190E+02	0.124E+04	0.692E+09	0.854E+00	0.591E+09
0.280E+03	0.161E+02	0.102E+04	0.495E+09	0.973E+00	0.482E+09
0.282E+03	0.136E+02	0.778E+03	0.350E+09	0.104E+01	0.364E+09
0.284E+03	0.116E+02	0.565E+03	0.252E+09	0.104E+01	0.261E+09
0.286E+03	0.100E+02	0.403E+03	0.183E+09	0.998E+00	0.183E+09
0.288E+03	0.863E+01	0.290E+03	0.133E+09	0.967E+00	0.129E+09
0.290E+03	0.788E+01	0.213E+03	0.109E+09	0.850E+00	0.927E+08
0.292E+03	0.713E+01	0.158E+03	0.871E+08	0.769E+00	0.670E+08
0.294E+03	0.663E+01	0.123E+03	0.737E+08	0.692E+00	0.510E+08
0.296E+03	0.625E+01	0.975E+02	0.643E+08	0.619E+00	0.398E+08
0.298E+03	0.588E+01	0.775E+02	0.554E+08	0.557E+00	0.308E+08
0.300E+03	0.550E+01	0.625E+02	0.471E+08	0.512E+00	0.241E+08
0.304E+03	0.513E+01	0.425E+02	0.393E+08	0.401E+00	0.158E+08
0.306E+03	0.488E+01	0.375E+02	0.344E+08	0.391E+00	0.135E+08
0.310E+03	0.463E+01	0.275E+02	0.298E+08	0.319E+00	0.949E+07
0.314E+03	0.438E+01	0.225E+02	0.254E+08	0.292E+00	0.740E+07
0.320E+03	0.413E+01	0.150E+02	0.212E+08	0.219E+00	0.464E+07
0.328E+03	0.388E+01	0.100E+02	0.173E+08	0.165E+00	0.286E+07
0.334E+03	0.375E+01	0.100E+02	0.155E+08	0.176E+00	0.273E+07
0.346E+03	0.363E+01	0.750E+01	0.137E+08	0.142E+00	0.194E+07
0.362E+03	0.350E+01	0.500E+01	0.119E+08	0.101E+00	0.121E+07
0.368E+03	0.338E+01	0.250E+01	0.103E+08	0.544E-01	0.559E+06
0.372E+03	0.325E+01	0.250E+01	0.866E+07	0.587E-01	0.508E+06

9/7/82
RUN382

P1700 - 6894 (67/33) BY VOLUME DRIED

(L/T RATIO = 5.773)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.009910 THICK=0.001100 OSC AMP=0.05

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.504E+02	0.216E+03	0.883E+10	0.421E-01	0.372E+09
-0.100E+03	0.495E+02	0.235E+03	0.850E+10	0.476E-01	0.405E+09
-0.800E+02	0.480E+02	0.206E+03	0.800E+10	0.444E-01	0.355E+09
-0.600E+02	0.472E+02	0.174E+03	0.774E+10	0.387E-01	0.300E+09
-0.400E+02	0.465E+02	0.153E+03	0.753E+10	0.349E-01	0.263E+09
-0.200E+02	0.462E+02	0.133E+03	0.740E+10	0.309E-01	0.229E+09
0.000E+00	0.458E+02	0.117E+03	0.727E+10	0.278E-01	0.202E+09
0.200E+02	0.455E+02	0.105E+03	0.719E+10	0.252E-01	0.181E+09
0.400E+02	0.453E+02	0.101E+03	0.712E+10	0.244E-01	0.174E+09
0.600E+02	0.451E+02	0.968E+02	0.706E+10	0.236E-01	0.167E+09
0.800E+02	0.449E+02	0.948E+02	0.699E+10	0.233E-01	0.163E+09
0.100E+03	0.446E+02	0.943E+02	0.692E+10	0.235E-01	0.162E+09
0.120E+03	0.443E+02	0.958E+02	0.683E+10	0.242E-01	0.165E+09
0.140E+03	0.438E+02	0.103E+03	0.667E+10	0.265E-01	0.177E+09
0.160E+03	0.429E+02	0.118E+03	0.640E+10	0.318E-01	0.204E+09
0.180E+03	0.413E+02	0.161E+03	0.593E+10	0.466E-01	0.276E+09
0.188E+03	0.381E+02	0.257E+03	0.503E+10	0.879E-01	0.442E+09
0.192E+03	0.335E+02	0.423E+03	0.390E+10	0.186E+00	0.726E+09
0.194E+03	0.297E+02	0.554E+03	0.304E+10	0.312E+00	0.951E+09
0.196E+03	0.241E+02	0.643E+03	0.200E+10	0.550E+00	0.110E+10
0.198E+03	0.172E+02	0.604E+03	0.101E+10	0.101E+01	0.102E+10
0.200E+03	0.109E+02	0.364E+03	0.389E+09	0.153E+01	0.596E+09
0.202E+03	0.759E+01	0.157E+03	0.179E+09	0.135E+01	0.243E+09
0.204E+03	0.628E+01	0.703E+02	0.116E+09	0.885E+00	0.103E+09
0.206E+03	0.555E+01	0.353E+02	0.860E+08	0.568E+00	0.488E+08
0.208E+03	0.516E+01	0.208E+02	0.715E+08	0.386E+00	0.276E+08
0.210E+03	0.488E+01	0.145E+02	0.615E+08	0.303E+00	0.186E+08
0.212E+03	0.459E+01	0.118E+02	0.520E+08	0.277E+00	0.144E+08
0.214E+03	0.438E+01	0.100E+02	0.454E+08	0.259E+00	0.118E+08
0.216E+03	0.409E+01	0.875E+01	0.369E+08	0.260E+00	0.958E+07
0.218E+03	0.386E+01	0.725E+01	0.306E+08	0.241E+00	0.738E+07
0.220E+03	0.366E+01	0.575E+01	0.254E+08	0.213E+00	0.540E+07
0.222E+03	0.346E+01	0.475E+01	0.204E+08	0.196E+00	0.402E+07
0.224E+03	0.326E+01	0.375E+01	0.158E+08	0.175E+00	0.275E+07
0.226E+03	0.306E+01	0.275E+01	0.113E+08	0.145E+00	0.165E+07
0.228E+03	0.289E+01	0.125E+01	0.772E+07	0.743E-01	0.574E+06
0.230E+03	0.269E+01	0.250E+00	0.383E+07	0.172E-01	0.658E+05

9/7/82
RUN489

P1700 W/ 33%VOL 6894, 3%WT SAF, 13.3%WT OS-124

(L/T RATIO = 6.978)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.008080 THICK=0.000910 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.272E+02	0.128E+03	0.554E+10	0.428E-01	0.237E+09
-0.100E+03	0.270E+02	0.130E+03	0.546E+10	0.443E-01	0.242E+09
-0.800E+02	0.268E+02	0.132E+03	0.538E+10	0.456E-01	0.245E+09
-0.600E+02	0.265E+02	0.130E+03	0.526E+10	0.457E-01	0.240E+09
-0.400E+02	0.263E+02	0.130E+03	0.518E+10	0.467E-01	0.242E+09
-0.200E+02	0.260E+02	0.133E+03	0.506E+10	0.487E-01	0.246E+09
0.000E+00	0.258E+02	0.137E+03	0.498E+10	0.509E-01	0.254E+09
0.200E+02	0.255E+02	0.142E+03	0.486E+10	0.541E-01	0.263E+09
0.400E+02	0.252E+02	0.143E+03	0.475E+10	0.558E-01	0.265E+09
0.600E+02	0.249E+02	0.162E+03	0.464E+10	0.647E-01	0.300E+09
0.800E+02	0.244E+02	0.177E+03	0.445E+10	0.735E-01	0.327E+09
0.100E+03	0.231E+02	0.212E+03	0.398E+10	0.987E-01	0.393E+09
0.108E+03	0.217E+02	0.247E+03	0.351E+10	0.130E+00	0.455E+09
0.112E+03	0.203E+02	0.279E+03	0.307E+10	0.168E+00	0.515E+09
0.114E+03	0.193E+02	0.295E+03	0.276E+10	0.197E+00	0.544E+09
0.116E+03	0.182E+02	0.307E+03	0.246E+10	0.229E+00	0.563E+09
0.118E+03	0.170E+02	0.318E+03	0.215E+10	0.271E+00	0.583E+09
0.120E+03	0.158E+02	0.326E+03	0.185E+10	0.322E+00	0.595E+09
0.122E+03	0.146E+02	0.329E+03	0.155E+10	0.385E+00	0.598E+09
0.124E+03	0.132E+02	0.326E+03	0.126E+10	0.465E+00	0.588E+09
0.126E+03	0.118E+02	0.313E+03	0.996E+09	0.562E+00	0.560E+09
0.128E+03	0.102E+02	0.285E+03	0.733E+09	0.684E+00	0.502E+09
0.130E+03	0.840E+01	0.241E+03	0.486E+09	0.846E+00	0.412E+09
0.132E+03	0.681E+01	0.184E+03	0.304E+09	0.980E+00	0.298E+09
0.134E+03	0.551E+01	0.126E+03	0.183E+09	0.103E+01	0.189E+09
0.136E+03	0.460E+01	0.810E+02	0.113E+09	0.949E+00	0.108E+09
0.138E+03	0.389E+01	0.495E+02	0.679E+08	0.812E+00	0.551E+08
0.140E+03	0.339E+01	0.298E+02	0.404E+08	0.643E+00	0.260E+08
0.142E+03	0.308E+01	0.170E+02	0.251E+08	0.446E+00	0.112E+08
0.144E+03	0.279E+01	0.875E+01	0.124E+08	0.279E+00	0.346E+07
0.146E+03	0.258E+01	0.300E+01	0.381E+07	0.112E+00	0.428E+06

9/7/82
RUN406

P170C W 3%SAF/WT, 33%'9"4/VOL 5 MIN

(L/T RATIO = 8.247)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010688 THICK=0.000770 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.334E+02	0.286E+03	0.105E+11	0.635E-01	0.664E+09
-0.100E+03	0.322E+02	0.320E+03	0.972E+10	0.764E-01	0.743E+09
-0.800E+02	0.316E+02	0.334E+03	0.936E+10	0.829E-01	0.775E+09
-0.600E+02	0.309E+02	0.348E+03	0.894E+10	0.903E-01	0.807E+09
-0.400E+02	0.303E+02	0.303E+03	0.861E+10	0.818E-01	0.704E+09
-0.200E+02	0.299E+02	0.280E+03	0.836E+10	0.776E-01	0.649E+09
0.000E+00	0.296E+02	0.279E+03	0.820E+10	0.789E-01	0.647E+09
0.200E+02	0.293E+02	0.276E+03	0.803E+10	0.797E-01	0.640E+09
0.400E+02	0.289E+02	0.259E+03	0.780E+10	0.770E-01	0.601E+09
0.600E+02	0.286E+02	0.246E+03	0.764E+10	0.745E-01	0.569E+09
0.800E+02	0.284E+02	0.236E+03	0.753E+10	0.728E-01	0.548E+09
0.100E+03	0.282E+02	0.229E+03	0.743E+10	0.714E-01	0.530E+09
0.120E+03	0.281E+02	0.224E+03	0.736E+10	0.705E-01	0.519E+09
0.140E+03	0.279E+02	0.222E+03	0.726E+10	0.710E-01	0.515E+09
0.160E+03	0.276E+02	0.226E+03	0.711E+10	0.735E-01	0.523E+09
0.180E+03	0.270E+02	0.241E+03	0.680E+10	0.821E-01	0.558E+09
0.190E+03	0.253E+02	0.301E+03	0.598E+10	0.116E+00	0.697E+09
0.194E+03	0.231E+02	0.401E+03	0.497E+10	0.186E+00	0.925E+09
0.196E+03	0.212E+02	0.483E+03	0.419E+10	0.266E+00	0.111E+10
0.198E+03	0.185E+02	0.563E+03	0.317E+10	0.408E+00	0.129E+10
0.200E+03	0.142E+02	0.582E+03	0.199E+10	0.663E+00	0.132E+10
0.202E+03	0.102E+02	0.445E+03	0.930E+09	0.105E+01	0.978E+09
0.204E+03	0.679E+01	0.223E+03	0.376E+09	0.120E+01	0.451E+09
0.206E+03	0.518E+01	0.978E+02	0.195E+09	0.905E+00	0.176E+09
0.208E+03	0.439E+01	0.458E+02	0.124E+09	0.589E+00	0.729E+08
0.210E+03	0.395E+01	0.235E+02	0.893E+08	0.373E+00	0.333E+08
0.212E+03	0.366E+01	0.138E+02	0.686E+08	0.254E+00	0.174E+08
0.214E+03	0.346E+01	0.875E+01	0.553E+08	0.181E+00	0.100E+08
0.216E+03	0.336E+01	0.650E+01	0.488E+08	0.143E+00	0.696E+07
0.218E+03	0.316E+01	0.475E+01	0.365E+08	0.118E+00	0.430E+07
0.220E+03	0.306E+01	0.300E+01	0.307E+08	0.793E-01	0.243E+07
0.222E+03	0.294E+01	0.200E+01	0.236E+08	0.575E-01	0.136E+07

9/7/82
RUN430

33.3% UPJOHN 2080, 66.7% TORLON 4000T BY WEIGHT

(L/T RATIO = 4.379)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010160 THICK=0.001450 OSC AMP=0.10

POINT BY POINT VALUES

TIM CR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.337E+02	0.143E+03	0.167E+10	0.313E-01	0.524E+08
-0.100E+03	0.332E+02	0.175E+03	0.163E+10	0.393E-01	0.640E+08
-0.800E+02	0.324E+02	0.231E+03	0.155E+10	0.545E-01	0.844E+08
-0.600E+02	0.315E+02	0.272E+03	0.147E+10	0.677E-01	0.993E+08
-0.400E+02	0.300E+02	0.253E+03	0.133E+10	0.695E-01	0.923E+08
-0.200E+02	0.295E+02	0.230E+03	0.128E+10	0.657E-01	0.841E+08
0.000E+00	0.289E+02	0.196E+03	0.123E+10	0.582E-01	0.716E+08
0.200E+02	0.285E+02	0.166E+03	0.119E+10	0.508E-01	0.606E+08
0.400E+02	0.280E+02	0.146E+03	0.115E+10	0.463E-01	0.532E+08
0.600E+02	0.274E+02	0.128E+03	0.110E+10	0.424E-01	0.466E+08
0.800E+02	0.271E+02	0.116E+03	0.108E+10	0.390E-01	0.423E+08
0.100E+03	0.269E+02	0.110E+03	0.106E+10	0.378E-01	0.400E+08
0.120E+03	0.267E+02	0.106E+03	0.105E+10	0.369E-01	0.386E+08
0.140E+03	0.264E+02	0.102E+03	0.102E+10	0.365E-01	0.373E+08
0.160E+03	0.260E+02	0.913E+02	0.998E+09	0.333E-01	0.333E+08
0.180E+03	0.257E+02	0.815E+02	0.968E+09	0.307E-01	0.297E+08
0.200E+03	0.252E+02	0.745E+02	0.932E+09	0.291E-01	0.272E+08
0.220E+03	0.248E+02	0.700E+02	0.902E+09	0.283E-01	0.255E+08
0.240E+03	0.244E+02	0.693E+02	0.873E+09	0.289E-01	0.252E+08
0.260E+03	0.231E+02	0.983E+02	0.785E+09	0.455E-01	0.357E+08
0.266E+03	0.219E+02	0.146E+03	0.700E+09	0.755E-01	0.529E+08
0.270E+03	0.204E+02	0.197E+03	0.607E+09	0.118E+00	0.714E+08
0.274E+03	0.184E+02	0.251E+03	0.493E+09	0.183E+00	0.905E+08
0.276E+03	0.173E+02	0.270E+03	0.434E+09	0.225E+00	0.974E+08
0.278E+03	0.162E+02	0.282E+03	0.380E+09	0.267E+00	0.101E+09
0.280E+03	0.150E+02	0.282E+03	0.323E+09	0.312E+00	0.101E+09
0.282E+03	0.139E+02	0.270E+03	0.273E+09	0.353E+00	0.961E+08
0.284E+03	0.127E+02	0.249E+03	0.229E+09	0.385E+00	0.880E+08
0.286E+03	0.116E+02	0.221E+03	0.192E+09	0.404E+00	0.777E+08
0.288E+03	0.107E+02	0.192E+03	0.160E+09	0.417E+00	0.669E+08
0.290E+03	0.975E+01	0.165E+03	0.132E+09	0.430E+00	0.567E+08
0.292E+03	0.904E+01	0.140E+03	0.112E+09	0.425E+00	0.477E+08
0.294E+03	0.843E+01	0.119E+03	0.962E+08	0.415E+00	0.399E+08
0.296E+03	0.791E+01	0.101E+03	0.838E+08	0.400E+00	0.335E+08
0.298E+03	0.740E+01	0.850E+02	0.722E+08	0.385E+00	0.278E+08
0.300E+03	0.700E+01	0.730E+02	0.636E+08	0.369E+00	0.235E+08
0.302E+03	0.661E+01	0.628E+02	0.558E+08	0.356E+00	0.199E+08
0.304E+03	0.622E+01	0.528E+02	0.484E+08	0.338E+00	0.163E+08
0.306E+03	0.591E+01	0.455E+02	0.428E+08	0.323E+00	0.138E+08
0.308E+03	0.560E+01	0.398E+02	0.374E+08	0.314E+00	0.118E+08
0.312E+03	0.521E+01	0.315E+02	0.312E+08	0.287E+00	0.898E+07
0.314E+03	0.500E+01	0.283E+02	0.280E+08	0.280E+00	0.785E+07
0.318E+03	0.461E+01	0.233E+02	0.225E+08	0.271E+00	0.609E+07
0.320E+03	0.441E+01	0.210E+02	0.198E+08	0.268E+00	0.530E+07
0.324E+03	0.410E+01	0.175E+02	0.159E+08	0.258E+00	0.409E+07
0.328E+03	0.381E+01	0.148E+02	0.125E+08	0.252E+00	0.314E+07
0.330E+03	0.369E+01	0.135E+02	0.111E+08	0.246E+00	0.273E+07
0.334E+03	0.339E+01	0.110E+02	0.794E+07	0.238E+00	0.189E+07
0.336E+03	0.330E+01	0.100E+02	0.707E+07	0.228E+00	0.161E+07

0.338E+03	0.320E+01	0.850E+01	0.611E+07	0.206E+00	0.126E+07
0.340E+03	0.300E+01	0.725E+01	0.427E+07	0.200E+00	0.852E+06
0.342E+03	0.290E+01	0.575E+01	0.339E+07	0.170E+00	0.575E+06
0.344E-03	0.281E+01	0.400E+01	0.265E+07	0.125E+00	0.332E+06
0.346E+03	0.261E+01	0.250E+01	0.103E+07	0.909E-01	0.940E+05

9/7/82
RUN433

33.3% XU218G; 66.7% 4000T

(L/T RATIO = 5.292)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010160 THICK=0.001200 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.376E+02	0.130E+03	0.368E+10	0.227E-01	0.837E+08
-0.100E+03	0.372E+02	0.135E+03	0.361E+10	0.242E-01	0.874E+08
-0.800E+02	0.364E+02	0.154E+03	0.345E+10	0.288E-01	0.995E+08
-0.600E+02	0.356E+02	0.152E+03	0.330E+10	0.298E-01	0.984E+08
-0.400E+02	0.349E+02	0.133E+03	0.317E+10	0.271E-01	0.859E+08
-0.200E+02	0.345E+02	0.119E+03	0.310E+10	0.248E-01	0.767E+08
0.000E+00	0.337E+02	0.119E+03	0.295E+10	0.260E-01	0.767E+08
0.200E+02	0.331E+02	0.129E+03	0.285E+10	0.291E-01	0.830E+08
0.400E+02	0.326E+02	0.136E+03	0.276E+10	0.318E-01	0.878E+08
0.600E+02	0.319E+02	0.153E+03	0.264E+10	0.374E-01	0.989E+08
0.800E+02	0.313E+02	~~0.177E+03~~	~~0.255E+10~~	~~0.448E-01~~	0.114E+09
0.100E+03	0.307E+02	0.201E+03	0.245E+10	0.529E-01	0.129E+09
0.120E+03	0.299E+02	0.221E+03	0.233E+10	0.611E-01	0.142E+09
0.140E+03	0.291E+02	0.218E+03	0.221E+10	0.636E-01	0.140E+09
0.160E+03	0.287E+02	0.193E+03	0.214E+10	0.581E-01	0.124E+09
0.180E+03	0.283E+02	0.168E+03	0.208E+10	0.521E-01	0.108E+09
0.200E+03	0.279E+02	0.136E+03	0.201E+10	0.434E-01	0.874E+08
0.220E+03	0.273E+02	0.107E+03	0.193E+10	0.356E-01	0.687E+08
0.240E+03	0.268E+02	0.958E+02	0.186E+10	0.332E-01	0.616E+08
0.260E+03	0.256E+02	0.110E+03	0.169E+10	0.416E-01	0.704E+08
0.270E+03	0.239E+02	0.157E+03	0.147E+10	0.682E-01	0.101E+09
0.274E+03	0.224E+02	0.213E+03	0.129E+10	0.106E+00	0.137E+09
0.278E+03	0.202E+02	0.283E+03	0.105E+10	0.172E+00	0.181E+09
0.280E+03	0.189E+02	0.314E+03	0.920E+09	0.218E+00	0.200E+09
0.282E+03	0.175E+02	0.335E+03	0.786E+09	0.271E+00	0.213E+09
0.284E+03	0.161E+02	0.340E+03	0.662E+09	0.326E+00	0.216E+09
0.286E+03	0.146E+02	0.328E+03	0.543E+09	0.380E+00	0.207E+09
0.288E+03	0.132E+02	0.298E+03	0.438E+09	0.425E+00	0.186E+09
0.290E+03	0.119E+02	0.259E+03	0.356E+09	0.451E+00	0.161E+09
0.292E+03	0.109E+02	0.217E+03	0.294E+09	0.454E+00	0.133E+09
0.294E+03	0.980E+01	0.179E+03	0.235E+09	0.461E+00	0.109E+09
0.296E+03	0.904E+01	0.146E+03	0.198E+09	0.442E+00	0.874E+08
0.298E+03	0.844E+01	0.120E+03	0.170E+09	0.416E+00	0.709E+08
0.300E+03	0.793E+01	0.985E+02	0.148E+09	0.389E+00	0.577E+08
0.302E+03	0.741E+01	0.820E+02	0.128E+09	0.370E+00	0.473E+08
0.304E+03	0.707E+01	0.693E+02	0.115E+09	0.343E+00	0.395E+08
0.306E+03	0.671E+01	0.588E+02	0.102E+09	0.323E+00	0.330E+08
0.310E+03	0.613E+01	0.443E+02	0.822E+08	0.292E+00	0.240E+08
0.312E+03	0.585E+01	0.390E+02	0.736E+08	0.283E+00	0.208E+08
0.314E+03	0.560E+01	0.345E+02	0.661E+08	0.273E+00	0.180E+08
0.316E+03	0.532E+01	0.315E+02	0.582E+08	0.275E+00	0.160E+08
0.320E+03	0.491E+01	0.265E+02	0.471E+08	0.272E+00	0.128E+08
0.322E+03	0.463E+01	0.243E+02	0.400E+08	0.281E+00	0.112E+08
0.324E+03	0.441E+01	0.228E+02	0.349E+08	0.290E+00	0.101E+08
0.326E+03	0.413E+01	0.210E+02	0.285E+08	0.306E+00	0.873E+07
0.328E+03	0.392E+01	0.193E+02	0.243E+08	0.310E+00	0.753E+07
0.330E+03	0.360E+01	0.168E+02	0.179E+08	0.320E+00	0.573E+07
0.332E+03	0.340E+01	0.145E+02	0.142E+08	0.311E+00	0.443E+07
0.334E+03	0.320E+01	0.118E+02	0.108E+08	0.285E+00	0.307E+07

0. 336E+03	0. 290E+01	0. 875E+01	0. 598E+07	0. 258E+00	0. 154E+07
0. 338E+03	0. 270E+01	0. 525E+01	0. 305E+07	0. 179E+00	0. 544E+06

9/7/82
RUN501

TORLON 4203 UPJOHN 2080 (50/50 BY WEIGHT)

(L/T RATIO = 5.205)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.012040 THICK=0.001220 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.368E+02	0.135E+03	0.283E+10	0.247E-01	0.699E+08
-0.100E+03	0.361E+02	0.168E+03	0.273E+10	0.319E-01	0.870E+08
-0.800E+02	0.352E+02	0.195E+03	0.260E+10	0.388E-01	0.101E+09
-0.600E+02	0.347E+02	0.196E+03	0.251E+10	0.405E-01	0.102E+09
-0.400E+02	0.341E+02	0.189E+03	0.244E+10	0.402E-01	0.980E+08
-0.200E+02	0.336E+02	0.187E+03	0.236E+10	0.410E-01	0.970E+08
0.000E+00	0.332E+02	0.191E+03	0.231E+10	0.429E-01	0.989E+08
0.200E+02	0.328E+02	0.205E+03	0.225E+10	0.470E-01	0.106E+09
0.400E+02	0.324E+02	0.221E+03	0.219E+10	0.523E-01	0.115E+09
0.600E+02	0.320E+02	0.221E+03	0.213E+10	0.537E-01	0.115E+09
0.800E+02	0.316E+02	0.220E+03	0.209E+10	0.544E-01	0.114E+09
0.100E+03	0.310E+02	0.218E+03	0.201E+10	0.563E-01	0.113E+09
0.120E+03	0.307E+02	0.219E+03	0.197E+10	0.576E-01	0.113E+09
0.140E+03	0.303E+02	0.216E+03	0.192E+10	0.583E-01	0.112E+09
0.160E+03	0.298E+02	0.208E+03	0.185E+10	0.583E-01	0.108E+09
0.180E+03	0.295E+02	0.213E+03	0.182E+10	0.607E-01	0.110E+09
0.200E+03	0.288E+02	0.212E+03	0.172E+10	0.636E-01	0.110E+09
0.220E+03	0.285E+02	0.203E+03	0.169E+10	0.622E-01	0.105E+09
0.240E+03	0.281E+02	0.183E+03	0.165E+10	0.575E-01	0.947E+08
0.260E+03	0.273E+02	0.183E+03	0.155E+10	0.609E-01	0.946E+08
0.268E+03	0.258E+02	0.200E+03	0.139E+10	0.745E-01	0.103E+09
0.276E+03	0.239E+02	0.244E+03	0.119E+10	0.106E+00	0.126E+09
0.282E+03	0.222E+02	0.292E+03	0.102E+10	0.147E+00	0.150E+09
0.290E+03	0.203E+02	0.364E+03	0.897E+09	0.209E+00	0.187E+09
0.294E+03	0.192E+02	0.396E+03	0.762E+09	0.266E+00	0.203E+09
0.298E+03	0.176E+02	0.412E+03	0.638E+09	0.330E+00	0.211E+09
0.302E+03	0.162E+02	0.404E+03	0.539E+09	0.382E+00	0.206E+09
0.306E+03	0.150E+02	0.384E+03	0.460E+09	0.423E+00	0.195E+09
0.310E+03	0.135E+02	0.350E+03	0.370E+09	0.476E+00	0.176E+09
0.312E+03	0.128E+02	0.320E+03	0.332E+09	0.484E+00	0.161E+09
0.316E+03	0.116E+02	0.264E+03	0.270E+09	0.487E+00	0.131E+09
0.138E+03	0.106E+02	0.238E+03	0.223E+09	0.525E+00	0.117E+09
0.320E+03	0.980E+01	0.212E+03	0.189E+09	0.547E+00	0.103E+09
0.322E+03	0.860E+01	0.184E+03	0.143E+09	0.617E+00	0.880E+08
0.324E+03	0.790E+01	0.160E+03	0.118E+09	0.636E+00	0.752E+08
0.326E+03	0.720E+01	0.128E+03	0.961E+08	0.612E+00	0.589E+08
0.328E+03	0.650E+01	0.108E+03	0.760E+08	0.634E+00	0.481E+08
0.330E+03	0.590E+01	0.920E+02	0.603E+08	0.655E+00	0.395E+08
0.332E+03	0.540E+01	0.760E+02	0.484E+08	0.646E+00	0.313E+08
0.334E+03	0.510E+01	0.700E+02	0.418E+08	0.667E+00	0.279E+08
0.336E+03	0.490E+01	0.620E+02	0.376E+08	0.640E+00	0.241E+08
0.338E+03	0.460E+01	0.560E+02	0.316E+08	0.656E+00	0.207E+08
0.342E+03	0.430E+01	0.440E+02	0.260E+08	0.590E+00	0.153E+08
0.344E+03	0.390E+01	0.380E+02	0.191E+08	0.620E+00	0.118E+08
0.348E+03	0.370E+01	0.180E+02	0.159E+08	0.326E+00	0.519E+07
0.354E+03	0.355E+01	0.100E+02	0.136E+08	0.197E+00	0.268E+07
0.358E+03	0.345E+01	0.880E+01	0.121E+08	0.183E+00	0.223E+07
0.364E+03	0.325E+01	0.670E+01	0.933E+07	0.157E+00	0.147E+07
0.366E+03	0.310E+01	0.650E+01	0.733E+07	0.168E+00	0.123E+07

0. 376E+03	0. 295E+01	0. 580E+01	0. 542E+07	0. 165E+00	0. 895E+06
0. 386E+03	0. 285E+01	0. 520E+01	0. 420E+07	0. 159E+00	0. 666E+06

10/29/82
RUN485

TORLON 4000T/UPJOHN 2080 (50/50 BY WT) IN DMF

(L/T RATIO = 5.991)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010310 THICK=0.001060 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
-0.120E+03	0.185E+02	0.523E+02	0.126E+10	0.378E-01	0.476E+08
-0.100E+03	0.179E+02	0.570E+02	0.118E+10	0.439E-01	0.519E+08
-0.800E+02	0.174E+02	0.563E+02	0.111E+10	0.460E-01	0.512E+08
-0.600E+02	0.169E+02	0.473E+02	0.105E+10	0.408E-01	0.429E+08
-0.400E+02	0.167E+02	0.383E+02	0.102E+10	0.341E-01	0.347E+08
-0.200E+02	0.164E+02	0.318E+02	0.987E+09	0.292E-01	0.288E+08
0.000E+00	0.162E+02	0.290E+02	0.956E+09	0.275E-01	0.263E+08
0.200E+02	0.160E+02	0.293E+02	0.940E+09	0.282E-01	0.265E+08
0.400E+02	0.158E+02	0.288E+02	0.915E+09	0.285E-01	0.260E+08
0.600E+02	0.157E+02	0.300E+02	0.904E+09	0.300E-01	0.272E+08
0.800E+02	0.156E+02	0.300E+02	0.892E+09	0.304E-01	0.272E+08
0.100E+03	0.155E+02	0.300E+02	0.879E+09	0.309E-01	0.271E+08
0.120E+03	0.154E+02	0.303E+02	0.868E+09	0.315E-01	0.274E+08
0.140E+03	0.154E+02	0.305E+02	0.859E+09	0.321E-01	0.276E+08
0.160E+03	0.153E+02	0.313E+02	0.856E+09	0.330E-01	0.283E+08
0.180E+03	0.152E+02	0.333E+02	0.845E+09	0.356E-01	0.300E+08
0.200E+03	0.151E+02	0.360E+02	0.833E+09	0.390E-01	0.325E+08
0.220E+03	0.150E+02	0.390E+02	0.817E+09	0.431E-01	0.352E+08
0.240E+03	0.148E+02	0.453E+02	0.791E+09	0.516E-01	0.408E+08
0.260E+03	0.144E+02	0.600E+02	0.756E+09	0.715E-01	0.541E+08
0.280E+03	0.136E+02	0.898E+02	0.669E+09	0.120E+00	0.806E+08
0.290E+03	0.127E+02	0.985E+02	0.582E+09	0.151E+00	0.880E+08
0.296E+03	0.120E+02	0.102E+03	0.517E+09	0.175E+00	0.904E+08
0.304E+03	0.111E+02	0.105E+03	0.439E+09	0.211E+00	0.926E+08
0.310E+03	0.105E+02	0.107E+03	0.390E+09	0.240E+00	0.936E+08
0.316E+03	0.970E+01	0.107E+03	0.329E+09	0.281E+00	0.924E+08
0.320E+03	0.919E+01	0.106E+03	0.293E+09	0.311E+00	0.913E+08
0.324E+03	0.870E+01	0.104E+03	0.260E+09	0.342E+00	0.889E+08
0.328E+03	0.820E+01	0.102E+03	0.229E+09	0.375E+00	0.858E+08
0.332E+03	0.761E+01	0.973E+02	0.194E+09	0.416E+00	0.807E+08
0.336E+03	0.706E+01	0.920E+02	0.164E+09	0.457E+00	0.749E+08
0.340E+03	0.657E+01	0.843E+02	0.139E+09	0.483E+00	0.671E+08
0.344E+03	0.609E+01	0.758E+02	0.116E+09	0.507E+00	0.587E+08
0.348E+03	0.559E+01	0.673E+02	0.940E+08	0.534E+00	0.502E+08
0.352E+03	0.519E+01	0.590E+02	0.778E+08	0.544E+00	0.423E+08
0.356E+03	0.486E+01	0.505E+02	0.656E+08	0.530E+00	0.347E+08
0.360E+03	0.459E+01	0.425E+02	0.559E+08	0.501E+00	0.280E+08
0.364E+03	0.428E+01	0.353E+02	0.455E+08	0.478E+00	0.218E+08
0.368E+03	0.396E+01	0.283E+02	0.359E+08	0.446E+00	0.160E+08
0.372E+03	0.378E+01	0.220E+02	0.304E+08	0.383E+00	0.116E+08
0.376E+03	0.358E+01	0.173E+02	0.249E+08	0.335E+00	0.834E+07
0.378E+03	0.347E+01	0.153E+02	0.223E+08	0.313E+00	0.698E+07
0.380E+03	0.336E+01	0.130E+02	0.194E+08	0.285E+00	0.553E+07
0.382E+03	0.326E+01	0.110E+02	0.169E+08	0.256E+00	0.434E+07
0.384E+03	0.316E+01	0.225E+01	0.145E+08	0.205E+00	0.297E+07
0.390E+03	0.297E+01	0.450E+01	0.112E+08	0.126E+00	0.129E+07
0.394E+03	0.286E+01	0.250E+01	0.773E+07	0.757E-01	0.585E+06

10/29/82
RUN713

TORLON 4203/XU 218 (75/25) DISSOLVED IN DMF.

(L/T RATIO = 6.546)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010300 THICK=0.000970 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.206E+02	0.440E+02	0.204E+10	0.257E-01	0.526E+08
0.400E+02	0.203E+02	0.473E+02	0.198E+10	0.285E-01	0.564E+08
0.600E+02	0.199E+02	0.498E+02	0.191E+10	0.311E-01	0.594E+08
0.800E+02	0.196E+02	0.510E+02	0.185E+10	0.328E-01	0.609E+08
0.100E+03	0.193E+02	0.498E+02	0.180E+10	0.330E-01	0.593E+08
0.120E+03	0.191E+02	0.470E+02	0.175E+10	0.319E-01	0.560E+08
0.140E+03	0.189E+02	0.435E+02	0.172E+10	0.301E-01	0.518E+08
0.160E+03	0.187E+02	0.395E+02	0.169E+10	0.279E-01	0.471E+08
0.180E+03	0.185E+02	0.370E+02	0.164E+10	0.268E-01	0.441E+08
0.200E+03	0.183E+02	0.343E+02	0.161E+10	0.253E-01	0.408E+08
0.220E+03	0.180E+02	0.323E+02	0.156E+10	0.246E-01	0.384E+08
0.240E+03	0.178E+02	0.330E+02	0.152E+10	0.258E-01	0.392E+08
0.260E+03	0.174E+02	0.375E+02	0.144E+10	0.309E-01	0.445E+08
0.276E+03	0.162E+02	0.585E+02	0.126E+10	0.552E-01	0.693E+08
0.282E+03	0.149E+02	0.805E+02	0.106E+10	0.895E-01	0.949E+08
0.286E+03	0.135E+02	0.105E+03	0.861E+09	0.143E+00	0.123E+09
0.288E+03	0.127E+02	0.114E+03	0.762E+09	0.175E+00	0.133E+09
0.290E+03	0.120E+02	0.121E+03	0.674E+09	0.208E+00	0.140E+09
0.292E+03	0.112E+02	0.128E+03	0.585E+09	0.252E+00	0.147E+09
0.294E+03	0.105E+02	0.134E+03	0.505E+09	0.303E+00	0.153E+09
0.296E+03	0.951E+01	0.138E+03	0.412E+09	0.378E+00	0.156E+09
0.298E+03	0.874E+01	0.139E+03	0.343E+09	0.451E+00	0.155E+09
0.300E+03	0.799E+01	0.136E+03	0.282E+09	0.527E+00	0.149E+09
0.302E+03	0.710E+01	0.127E+03	0.217E+09	0.626E+00	0.136E+09
0.304E+03	0.630E+01	0.114E+03	0.164E+09	0.712E+00	0.117E+09
0.306E+03	0.557E+01	0.973E+02	0.122E+09	0.776E+00	0.947E+08
0.308E+03	0.486E+01	0.785E+02	0.857E+08	0.823E+00	0.705E+08
0.310E+03	0.432E+01	0.610E+02	0.615E+08	0.809E+00	0.497E+08
0.312E+03	0.389E+01	0.458E+02	0.440E+08	0.751E+00	0.330E+08
0.314E+03	0.346E+01	0.325E+02	0.287E+08	0.672E+00	0.193E+08
0.316E+03	0.316E+01	0.228E+02	0.189E+08	0.564E+00	0.107E+08
0.318E+03	0.288E+01	0.153E+02	0.105E+08	0.458E+00	0.479E+07
0.320E+03	0.267E+01	0.900E+01	0.504E+07	0.312E+00	0.157E+07
0.322E+03	0.255E+01	0.500E+01	0.184E+07	0.191E+00	0.351E+06
0.324E+03	0.248E+01	0.100E+01	0.121E+06	0.403E-01	0.487E+04

11/2/82
RUN719

TORLON 4203/XU 218 (50/50) DISSOLVED IN DMF, PRECIPITATED IN MEOH

(L/T RATIO = 6.546)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010470 THICK=0.000970 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.180E+02	0.280E+02	0.153E+10	0.214E-01	0.328E+08
0.400E+02	0.176E+02	0.313E+02	0.146E+10	0.250E-01	0.365E+08
0.600E+02	0.172E+02	0.350E+02	0.140E+10	0.292E-01	0.409E+08
0.800E+02	0.170E+02	0.370E+02	0.136E+10	0.317E-01	0.432E+08
0.100E+03	0.168E+02	0.378E+02	0.133E+10	0.332E-01	0.441E+08
0.120E+03	0.164E+02	0.340E+02	0.127E+10	0.313E-01	0.396E+08
0.140E+03	0.161E+02	0.320E+02	0.122E+10	0.306E-01	0.373E+08
0.160E+03	0.160E+02	0.288E+02	0.120E+10	0.278E-01	0.335E+08
0.180E+03	0.159E+02	0.258E+02	0.119E+10	0.253E-01	0.300E+08
0.200E+03	0.157E+02	0.238E+02	0.116E+10	0.238E-01	0.276E+08
0.220E+03	0.157E+02	0.233E+02	0.116E+10	0.233E-01	0.270E+08
0.240E+03	0.157E+02	0.258E+02	0.116E+10	0.258E-01	0.300E+08
0.260E+03	0.156E+02	0.290E+02	0.114E+10	0.295E-01	0.337E+08
0.280E+03	0.151E+02	0.443E+02	0.107E+10	0.480E-01	0.514E+08
0.288E+03	0.143E+02	0.668E+02	0.958E+09	0.807E-01	0.772E+08
0.292E+03	0.135E+02	0.815E+02	0.850E+09	0.110E+00	0.940E+08
0.296E+03	0.126E+02	0.945E+02	0.734E+09	0.148E+00	0.108E+09
0.300E+03	0.116E+02	0.106E+03	0.622E+09	0.193E+00	0.120E+09
0.302E+03	0.110E+02	0.108E+03	0.557E+09	0.219E+00	0.122E+09
0.304E+03	0.104E+02	0.109E+03	0.495E+09	0.248E+00	0.123E+09
0.306E+03	0.971E+01	0.109E+03	0.424E+09	0.287E+00	0.122E+09
0.308E+03	0.923E+01	0.110E+03	0.380E+09	0.321E+00	0.122E+09
0.310E+03	0.864E+01	0.109E+03	0.329E+09	0.363E+00	0.120E+09
0.312E+03	0.802E+01	0.107E+03	0.280E+09	0.412E+00	0.115E+09
0.314E+03	0.743E+01	0.104E+03	0.236E+09	0.466E+00	0.110E+09
0.316E+03	0.685E+01	0.973E+02	0.196E+09	0.514E+00	0.101E+09
0.318E+03	0.631E+01	0.913E+02	0.162E+09	0.568E+00	0.921E+08
0.320E+03	0.575E+01	0.813E+02	0.130E+09	0.609E+00	0.790E+08
0.322E+03	0.522E+01	0.698E+02	0.102E+09	0.634E+00	0.645E+08
0.324E+03	0.474E+01	0.583E+02	0.785E+08	0.643E+00	0.505E+08
0.326E+03	0.434E+01	0.473E+02	0.611E+08	0.623E+00	0.380E+08
0.328E+03	0.391E+01	0.365E+02	0.441E+08	0.591E+00	0.261E+08
0.330E+03	0.363E+01	0.278E+02	0.337E+08	0.524E+00	0.177E+08
0.332E+03	0.333E+01	0.203E+02	0.237E+08	0.454E+00	0.108E+08
0.334E+03	0.313E+01	0.143E+02	0.175E+08	0.362E+00	0.634E+07
0.336E+03	0.294E+01	0.925E+01	0.121E+08	0.266E+00	0.320E+07
0.338E+03	0.274E+01	0.550E+01	0.657E+07	0.182E+00	0.120E+07
0.340E+03	0.264E+01	0.225E+01	0.401E+07	0.802E-01	0.321E+06

11/2/82
RUN721

TORLON 4203/XU 218 (25/75), DISSOLVED IN DMF,

(L/T RATIO = 5.336)

SAMPLE DIMENSIONS
LENGTH=0.006350 WIDTH=0.010320 THICK=0.001190 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.278E+02	0.112E+03	0.202E+10	0.360E-01	0.728E+08
0.400E+02	0.274E+02	0.116E+03	0.196E+10	0.382E-01	0.751E+08
0.600E+02	0.268E+02	0.124E+03	0.188E+10	0.430E-01	0.807E+08
0.800E+02	0.264E+02	0.130E+03	0.182E+10	0.463E-01	0.845E+08
0.100E+03	0.259E+02	0.130E+03	0.176E+10	0.479E-01	0.841E+08
0.120E+03	0.254E+02	0.122E+03	0.169E+10	0.470E-01	0.792E+08
0.140E+03	0.250E+02	0.111E+03	0.164E+10	0.441E-01	0.722E+08
0.160E+03	0.247E+02	0.101E+03	0.159E+10	0.409E-01	0.652E+08
0.180E+03	0.244E+02	0.893E+02	0.156E+10	0.371E-01	0.579E+08
0.200E+03	0.241E+02	0.795E+02	0.152E+10	0.338E-01	0.516E+08
0.220E+03	0.238E+02	0.713E+02	0.148E+10	0.312E-01	0.462E+08
0.240E+03	0.235E+02	0.668E+02	0.145E+10	0.299E-01	0.433E+08
0.260E+03	0.231E+02	0.663E+02	0.140E+10	0.308E-01	0.429E+08
0.280E+03	0.226E+02	0.703E+02	0.134E+10	0.340E-01	0.455E+08
0.300E+03	0.219E+02	0.114E+03	0.125E+10	0.587E-01	0.734E+08
0.310E+03	0.205E+02	0.229E+03	0.109E+10	0.135E+00	0.148E+09
0.314E+03	0.188E+02	0.293E+03	0.914E+09	0.206E+00	0.188E+09
0.318E+03	0.170E+02	0.347E+03	0.749E+09	0.297E+00	0.223E+09
0.320E+03	0.160E+02	0.371E+03	0.663E+09	0.358E+00	0.237E+09
0.322E+03	0.149E+02	0.388E+03	0.575E+09	0.430E+00	0.247E+09
0.324E+03	0.135E+02	0.392E+03	0.467E+09	0.531E+00	0.248E+09
0.326E+03	0.119E+02	0.375E+03	0.361E+09	0.652E+00	0.235E+09
0.328E+03	0.102E+02	0.333E+03	0.260E+09	0.790E+00	0.206E+09
0.330E+03	0.838E+01	0.270E+03	0.169E+09	0.953E+00	0.161E+09
0.332E+03	0.681E+01	0.199E+03	0.106E+09	0.106E+01	0.113E+09
0.334E+03	0.568E+01	0.138E+03	0.689E+08	0.106E+01	0.734E+08
0.336E+03	0.486E+01	0.935E+02	0.463E+08	0.980E+00	0.454E+08
0.338E+03	0.429E+01	0.628E+02	0.324E+08	0.847E+00	0.274E+08
0.340E+03	0.389E+01	0.423E+02	0.238E+08	0.693E+00	0.165E+08
0.342E+03	0.356E+01	0.288E+02	0.174E+08	0.562E+00	0.975E+07
0.344E+03	0.330E+01	0.195E+02	0.126E+08	0.444E+00	0.559E+07
0.346E+03	0.316E+01	0.135E+02	0.102E+08	0.335E+00	0.343E+07
0.348E+03	0.297E+01	0.900E+01	0.720E+07	0.252E+00	0.182E+07
0.350E+03	0.286E+01	0.575E+01	0.546E+07	0.174E+00	0.950E+06

10/29/82
RUN677

TORLON 4203/UPJOHN 2080/XU218G (60/20/20 BY WEIGHT)

(L/T RATIO = 5.000)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010280 THICK=0.001270 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.235E+02	0.538E+02	0.119E+10	0.242E-01	0.288E+08
0.400E+02	0.231E+02	0.588E+02	0.115E+10	0.274E-01	0.314E+08
0.600E+02	0.227E+02	0.648E+02	0.111E+10	0 312E-01	0.346E+08
0.800E+02	0.223E+02	0.665E+02	0.107E+10	0.332E-01	0 356E+08
0.100E+03	0.219E+02	0.640E+02	0.103E+10	0.331E-01	0.342E+08
0.120E+03	0.216E+02	0.605E+02	0.100E+10	0.322E-01	0 323E+08
0.140E+03	0.213E+02	0.568E+02	0.976E+09	0.311E-01	0.303E+08
0.160E+03	0.210E+02	0.538E+02	0.949E+09	0.302E-01	0.287E+08
0.180E+03	0.208E+02	0.518E+02	0.930E+09	0.297E-01	0.276E+08
0.200E+03	0.204E+02	0.505E+02	0.894E+09	0.301E-01	0.269E+08
0.220E+03	0.199E+02	0.493E+02	0.853E+09	0.308E-01	0.262E+08
0.240E+03	0.194E+02	0.505E+02	0.806E+09	0.334E-01	0.269E+08
0.260E+03	0.185E+02	0.618E+02	0.736E+09	0.446E-01	0.328E+08
0.272E+03	0.175E+02	0.728E+02	0.655E+09	0.589E-01	0.386E+08
0.280E+03	0.165E+02	0.898E+02	0.583E+09	0.815E-01	0.475E+08
0.288E+03	0.153E+02	0.123E+03	0.498E+09	0.130E+00	0.648E+08
0.220E+02	0.145E+02	0.143E+03	0.448E+09	0.167E+00	0.749E+08
0.296E+03	0.135E+02	0.161E+03	0.387E+09	0.217E+00	0 840E+08
0.300E+03	0.124E+02	0.175E+03	0.323E+09	0.281E+00	0.908E+08
0.302E+03	0.118E+02	0.180E+03	0.288E+09	0.322E+00	0 939E+08
0.304E+03	0.111E+02	0 182E+03	0.257E+09	0 364E+00	0.935E+08
0.306E+03	0.104E+02	0.181E+03	0.224E+09	0.412E+00	0 923E+08
0.308E+03	0.952E+01	0.177E+03	0.185E+09	0.483E+00	0.892E+08
0.310E+03	0.879E+01	0 169E+03	0.155E+09	0.543E+00	0 842E+08
0.312E+03	0.799E+01	0.157E+03	0.126E+09	0.609E+00	0 767E+08
0.314E+03	0.716E+01	0.141E+03	0.986E+08	0.682E+00	0.672E+08
0.316E+03	0.647E+01	0.122E+03	0.781E+08	0.719E+00	0.562E+08
0.318E+03	0.572E+01	0.102E+03	0.582E+08	0.770E+00	0.448E+08
0.320E-03	0.509E+01	0.820E+02	0.431E+08	0.785E+00	0.339E+08
0.322E+03	0.459E+01	0.648E+02	0.326E+08	0.763E+00	0 249E+08
0.324E+03	0.411E+01	0.498E+02	0.236E+08	0.729E+00	0.172E+08
0.326E+03	0.374E+01	0.378E+02	0.171E+08	0.670E+00	0.115E+08
0.328E+03	0.336E+01	0.280E+02	0.113E+08	0.614E+00	0.694E+07
0 330E+03	0.316E+01	0.200E+02	0.845E+07	0.496E+00	0.419E+07
0.332E-03	0.290E+01	0.140E+02	0.499E+07	0.413E+00	0.206E+07
0.334E-03	0.267E+01	0.900E+01	0.225E+07	0.312E+00	0.701E+06
0.336E+03	0.256E+01	0.475E+01	0 968E+06	0.179E+00	0.174E+06
0.338E-03	0.248E+01	0.125E+01	0.108E+06	0.502E-01	0.543E+04

10/29/82
RUN675

TORLON 4203/UPJOHN 2080 (25/75 BY WEIGHT) DISSOLVED IN DMF

(L/T RATIO = 4.811)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010270 THICK=0.001320 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OSC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.245E+02	0.172E+03	0.116E+10	0.709E-01	0.823E+08
0.400E+02	0.242E+02	0.174E+03	0.113E+10	0.736E-01	0.832E+08
0.600E+02	0.240E+02	0.179E+03	0.111E+10	0.773E-01	0.855E+08
0.800E+02	0.238E+02	0.185E+03	0.109E+10	0.811E-01	0.882E+08
0.100E+03	0.237E+02	0.188E+03	0.108E+10	0.831E-01	0.896E+08
0.120E+03	0.236E+02	0.190E+03	0.107E+10	0.848E-01	0.907E+08
0.140E+03	0.236E+02	0.189E+03	0.107E+10	0.842E-01	0.901E+08
0.160E+03	0.235E+02	0.182E+03	0.106E+10	0.817E-01	0.866E+08
0.180E+03	0.235E+02	0.166E+03	0.106E+10	0.745E-01	0.790E+08
0.200E+03	0.234E+02	0.148E+03	0.105E+10	0.672E-01	0.706E+08
0.220E+03	0.232E+02	0.140E+03	0.103E+10	0.648E-01	0.669E+08
0.240E+03	0.229E+02	0.142E+03	0.101E+10	0.672E-01	0.676E+08
0.260E+03	0.224E+02	0.159E+03	0.962E+09	0.785E-01	0.756E+08
0.276E+03	0.212E+02	0.198E+03	0.862E+09	0.110E+00	0.944E+08
0.284E+03	0.201E+02	0.219E+03	0.772E+09	0.135E+00	0.104E+09
0.288E+03	0.190E+02	0.227E+03	0.692E+09	0.155E+00	0.108E+09
0.292E+03	0.178E+02	0.225E+03	0.605E+09	0.176E+00	0.106E+09
0.296E+03	0.164E+02	0.208E+03	0.512E+09	0.191E+00	0.980E+08
0.300E+03	0.151E+02	0.193E+03	0.433E+09	0.209E+00	0.905E+08
0.304E+03	0.140E+02	0.189E+03	0.372E+09	0.238E+00	0.884E+08
0.308E+03	0.130E+02	0.195E+03	0.317E+09	0.285E+00	0.905E+08
0.312E+03	0.121E+02	0.205E+03	0.274E+09	0.346E+00	0.947E+08
0.316E+03	0.112E+02	0.215E+03	0.232E+09	0.425E+00	0.987E+08
0.320E+03	0.102E+02	0.220E+03	0.192E+09	0.522E+00	0.999E+08
0.322E+03	0.959E+01	0.219E+03	0.167E+09	0.591E+00	0.986E+08
0.324E+03	0.905E+01	0.214E+03	0.147E+09	0.648E+00	0.955E+08
0.326E+03	0.848E+01	0.207E+03	0.128E+09	0.713E+00	0.912E+08
0.328E+03	0.796E+01	0.196E+03	0.111E+09	0.767E+00	0.856E+08
0.330E+03	0.718E+01	0.178E+03	0.883E+08	0.856E+00	0.756E+08
0.332E+03	0.666E+01	0.158E+03	0.744E+08	0.880E+00	0.655E+08
0.334E+03	0.616E+01	0.139E+03	0.620E+08	0.909E+00	0.564E+08
0.336E+03	0.566E+01	0.120E+03	0.505E+08	0.928E+00	0.468E+08
0.338E+03	0.528E+01	0.102E+03	0.422E+08	0.907E+00	0.383E+08
0.340E+03	0.486E+01	0.830E+02	0.341E+08	0.870E+00	0.297E+08
0.342E+03	0.459E+01	0.673E+02	0.290E+08	0.798E+00	0.232E+08
0.344E+03	0.428E+01	0.545E+02	0.236E+08	0.740E+00	0.175E+08
0.346E+03	0.407E+01	0.440E+02	0.204E+08	0.657E+00	0.134E+08
0.348E+03	0.389E+01	0.350E+02	0.175E+08	0.574E+00	0.100E+08
0.350E+03	0.365E+01	0.275E+02	0.140E+08	0.512E+00	0.717E+07
0.352E+03	0.346E+01	0.215E+02	0.114E+08	0.445E+00	0.508E+07
0.354E+03	0.335E+01	0.165E+02	0.992E+07	0.365E+00	0.362E+07
0.356E+03	0.316E+01	0.125E+02	0.754E+07	0.310E+00	0.234E+07
0.358E+03	0.306E+01	0.925E+01	0.634E+07	0.244E+00	0.155E+07
0.360E+03	0.296E+01	0.650E+01	0.516E+07	0.184E+00	0.948E+06
0.362E+03	0.288E+01	0.425E+01	0.416E+07	0.129E+00	0.531E+06
0.364E+03	0.281E+01	0.200E+01	0.348E+07	0.627E-01	0.218E+06

10/29/82
RUN680

TORLON 4203/UPJOHN (75/25 BY WEIGHT) DISSOLVED IN DMF;

(L/T RATIO = 5.427)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010360 THICK=0.001170 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.183E+02	0.323E+02	0.907E+09	0.240E-01	0.217E+08
0.400E+02	0.178E+02	0.323E+02	0.862E+09	0.252E-01	0.217E+08
0.600E+02	0.174E+02	0.335E+02	0.822E+09	0.274E-01	0.225E+08
0.800E+02	0.168E+02	0.338E+02	0.766E+09	0.296E-01	0.227E+08
0.100E+03	0.164E+02	0.318E+02	0.728E+09	0.293E-01	0.213E+08
0.120E+03	0.159E+02	0.300E+02	0.685E+09	0.294E-01	0.201E+08
0.140E+03	0.155E+02	0.280E+02	0.650E+09	0.289E-01	0.187E+08
0.160E+03	0.152E+02	0.260E+02	0.623E+09	0.279E-01	0.174E+08
0.180E+03	0.148E+02	0.250E+02	0.593E+09	0.282E-01	0.167E+08
0.200E+03	0.145E+02	0.250E+02	0.566E+09	0.294E-01	0.167E+08
0.220E+03	0.141E+02	0.250E+02	0.534E+09	0.312E-01	0.166E+08
0.240E+03	0.136E+02	0.270E+02	0.495E+09	0.362E-01	0.179E+08
0.260E+03	0.129E+02	0.310E+02	0.445E+09	0.461E-01	0.205E+08
0.272E+03	0.121E+02	0.378E+02	0.390E+09	0.637E-01	0.249E+08
0.278E+03	0.114E+02	0.473E+02	0.344E+09	0.900E-01	0.309E+08
0.282E+03	0.107E+02	0.635E+02	0.302E+09	0.137E+00	0.413E+08
0.286E+03	0.985E+01	0.858E+02	0.252E+09	0.219E+00	0.552E+08
0.288E+03	0.929E+01	0.930E+02	0.222E+09	0.267E+00	0.594E+08
0.292E+03	0.839E+01	0.105E+03	0.178E+09	0.370E+00	0.659E+08
0.294E+03	0.789E+01	0.107E+03	0.155E+09	0.428E+00	0.664E+08
0.296E+03	0.738E+01	0.106E+03	0.134E+09	0.484E+00	0.648E+08
0.298E+03	0.681E+01	0.103E+03	0.112E+09	0.549E+00	0.613E+08
0.300E+03	0.629E+01	0.675E+01	0.925E+08	0.423E-01	0.392E+07
0.302E+03	0.578E+01	0.893E+02	0.754E+08	0.664E+00	0.501E+08
0.304E+03	0.531E+01	0.803E+02	0.612E+08	0.705E+00	0.432E+08
0.306E+03	0.488E+01	0.695E+02	0.489E+08	0.725E+00	0.354E+08
0.308E+03	0.440E+01	0.583E+02	0.367E+08	0.746E+00	0.274E+08
0.310E+03	0.397E+01	0.470E+02	0.268E+08	0.738E+00	0.198E+08
0.312E+03	0.366E+01	0.365E+02	0.202E+08	0.675E+00	0.136E+08
0.314E+03	0.336E+01	0.300E+02	0.143E+08	0.658E+00	0.944E+07
0.316E+03	0.326E+01	0.270E+02	0.125E+08	0.629E+00	0.788E+07
0.318E+03	0.315E+01	0.273E+02	0.105E+08	0.681E+00	0.716E+07
0.320E+03	0.306E+01	0.265E+02	0.902E+07	0.700E+00	0.632E+07
0.324E+03	0.296E+01	0.225E+02	0.735E+07	0.636E+00	0.467E+07
0.326E+03	0.288E+01	0.180E+02	0.593E+07	0.540E+00	0.320E+07
0.328E+03	0.280E+01	0.165E+02	0.475E+07	0.522E+00	0.248E+07

11/2/82
RUN587

P1800/200P (33.3/66.7) BY WEIGHT

(L/T RATIO = 4.811)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010290 THICK=0.001320 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.233E+02	0.658E+02	0.104E+10	0.300E-01	0.313E+08
0.400E+02	0.233E+02	0.573E+02	0.104E+10	0.261E-01	0.273E+08
0.600E+02	0.233E+02	0.525E+02	0.104E+10	0.239E-01	0.250E+08
0.800E+02	0.233E+02	0.490E+02	0.104E+10	0.223E-01	0.233E+08
0.100E+03	0.233E+02	0.480E+02	0.104E+10	0.219E-01	0.229E+08
0.120E+03	0.232E+02	0.483E+02	0.104E+10	0.222E-01	0.230E+08
0.140E+03	0.231E+02	0.498E+02	0.103E+10	0.231E-01	0.237E+08
0.160E+03	0.227E+02	0.550E+02	0.992E+09	0.264E-01	0.262E+08
0.180E+03	0.220E+02	0.765E+02	0.931E+09	0.391E-01	0.364E+08
0.192E+03	0.206E+02	0.815E+02	0.816E+09	0.474E-01	0.387E+08
0.200E+03	0.195E+02	0.765E+02	0.726E+09	0.500E-01	0.363E+08
0.212E+03	0.182E+02	0.878E+02	0.631E+09	0.657E-01	0.415E+08
0.218E+03	0.167E+02	0.121E+03	0.531E+09	0.107E+00	0.571E+08
0.222E+03	0.149E+02	0.146E+03	0.421E+09	0.162E+00	0.683E+08
0.224E+03	0.138E+02	0.162E+03	0.356E+09	0.212E+00	0.754E+08
0.226E+03	0.126E+02	0.183E+03	0.296E+09	0.286E+00	0.847E+08
0.228E+03	0.111E+02	0.201E+03	0.229E+09	0.402E+00	0.921E+08
0.230E+03	0.934E+01	0.205E+03	0.157E+09	0.582E+00	0.917E+08
0.232E+03	0.753E+01	0.180E+03	0.981E+08	0.789E+00	0.774E+08
0.234E+03	0.579E+01	0.129E+03	0.531E+08	0.952E+00	0.506E+08
0.236E+03	0.455E+01	0.773E+02	0.283E+08	0.925E+00	0.262E+08
0.238E+03	0.364E+01	0.413E+02	0.138E+08	0.773E+00	0.107E+08
0.240E+03	0.304E+01	0.200E+02	0.602E+07	0.538E+00	0.324E+07
0.242E+03	0.255E+01	0.625E+01	0.732E+06	0.238E+00	0.174E+06

10/29/82
RUN672

P1800/200P (25:75 WT %) DISSOLVED IN DMF, PRECIPITATED IN H2O

(L. T RATIO = 5.121)

SAMPLE DIMENSIONS

LENGTH=0.006350 WIDTH=0.010300 THICK=0.001240 OSC AMP=0.10

POINT BY POINT VALUES

TIM OR TMP	OCC FREQ	DAMPING	MODULUS	LOSS TANG	LOSS MODL
0.200E+02	0.286E+02	0.122E+03	0.190E+10	0.369E-01	0.701E+08
0.400E+02	0.283E+02	0.108E+03	0.186E+10	0.334E-01	0.621E+08
0.600E+02	0.279E+02	0.923E+02	0.181E+10	0.294E-01	0.531E+08
0.800E+02	0.276E+02	0.788E+02	0.178E+10	0.255E-01	0.453E+08
0.100E+03	0.274E+02	0.723E+02	0.174E+10	0.239E-01	0.416E+08
0.120E+03	0.271E+02	0.733E+02	0.170E+10	0.248E-01	0.422E+08
0.140E+03	0.265E+02	0.763E+02	0.163E+10	0.270E-01	0.439E+08
0.160E+03	0.253E+02	0.905E+02	0.149E+10	0.350E-01	0.520E+08
0.172E+03	0.240E+02	0.120E+03	0.133E+10	0.518E-01	0.689E+08
0.182E+03	0.225E+02	0.158E+03	0.117E+10	0.770E-01	0.903E+08
0.188E+03	0.211E+02	0.192E+03	0.103E+10	0.106E+00	0.110E+09
0.194E+03	0.195E+02	0.204E+03	0.879E+09	0.132E+00	0.116E+09
0.198E+03	0.184E+02	0.186E+03	0.780E+09	0.136E+00	0.106E+09
0.204E+03	0.171E+02	0.134E+03	0.672E+09	0.113E+00	0.760E+08
0.208E+03	0.162E+02	0.124E+03	0.601E+09	0.117E+00	0.703E+08
0.212E+03	0.151E+02	0.126E+03	0.517E+09	0.138E+00	0.712E+08
0.216E+03	0.136E+02	0.133E+03	0.419E+09	0.178E+00	0.744E+08
0.218E+03	0.128E+02	0.135E+03	0.368E+09	0.205E+00	0.753E+08
0.220E+03	0.116E+02	0.136E+03	0.311E+09	0.243E+00	0.756E+08
0.222E+03	0.106E+02	0.132E+03	0.250E+09	0.290E+00	0.726E+08
0.224E+03	0.932E+01	0.124E+03	0.189E+09	0.353E+00	0.668E+08
0.226E+03	0.819E+01	0.114E+03	0.143E+09	0.423E+00	0.603E+08
0.228E+03	0.709E+01	0.105E+03	0.103E+09	0.520E+00	0.536E+08
0.230E+03	0.610E+01	0.945E+02	0.725E+08	0.630E+00	0.459E+08
0.232E+03	0.505E+01	0.785E+02	0.454E+08	0.763E+00	0.346E+08
0.234E+03	0.418E+01	0.565E+02	0.265E+08	0.804E+00	0.213E+08
0.236E+03	0.334E+01	0.343E+02	0.121E+08	0.751E+00	0.911E+07
0.238E+03	0.276E+01	0.175E+02	0.353E+07	0.568E+00	0.201E+07
0.240E+03	0.248E+01	0.550E+01	0.578E+05	0.222E+00	0.128E+05

*USGPO: 659-062-959